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ORIGINAL ARTICLES.

THE TRUE PLACE OF MILK IN THE TREATMENT OF DIABETES MELLITUS.

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THE very emphatic declaration by Dr. Austin Flint, Jr, in THE MEDICAL NEWS of July 9, 1887, as to the harmfulness of milk in the treatment of diabetes mellitus seems to call for some reply from those who have been in the habit of regarding it with greater favor, and as I have published statements which distinctly commend its use under circumstances where Dr. Flint apparently directly condemns it, it appears not inappropriate that I should come forward and explain.

In the first place, I am not aware that any one, except Dr. Donkin, claims that milk is a specific for diabetes mellitus. My experience thoroughly sustains that of Dr. Flint, that "the so-called specifics for diabetes have little if any effect." Nor do I believe that a specific remedy for diabetes is likely to be discovered while its pathology is so ill determined as at present. There is reason to believe that we are able to influence the quantity of glucose in the urine of a given case by more than one drug. Thus, opium, and especially its alkaloid codeine, is well known to have this effect. In fact, codeine is by far the most active drug in this respect known to me. The bromide of arsenic, in the shape of Clemens's or Gilleford's solution, undoubtedly is influential. Ergot I have more than once seen reduce the quantity of sugar and urine. Salicylate of sodium in the hands of competent observers has been similarly credited. Finally, I have reason to believe, although my experience has as yet been too limited to justify any positive conclusion, that the treatment by lithium carbonate and sodium arseniate, recently announced by Martineau, but really originating with the late Prof. Rouget, may act similarly. Yet I am free to say that none of these remedies in my hands has ever cured a case, and I can cordially confirm Dr. Flint in the view that by far the most efficient treatment has been the dietetic.

And it is as a dietetic measure that I use milk, and always *skim milk*, in the beginning of treatment. It has happened to me time and again that glucose has completely disappeared from the urine and the quantity of the latter been rendered normal within a week after instituting the skim-milk treatment, and this, too, in cases where an antidiabetic diet, from which all kinds of bread were excluded, had failed to produce the same effect. On the other hand, it has happened to me, and I have now such a case, in which the use of milk without any drug was promptly followed by a reduction in the amount of glucose, which was not, however, permanent. The patient is an adult, male, aged thirty-nine years. The case is quite an acute one, in which the symptoms had set in but six weeks before he consulted me; at that time his urine contained fully eight per cent. of sugar. I immediately ordered him on an exclusive skim-milk diet. He himself much preferred buttermilk, and as I thought the treatment would be essentially the same I permitted it. Under this treatment the sugar rapidly declined until at the end of 20 days it amounted to but 0.9 of 1 per cent. One week later, however, it had risen to 3 per cent. I then withdrew the milk and placed him on Clemens's solution of bromide of arsenic, in three-drop doses, along with an ordinary diabetic diet including gluten bread. A week later the sugar had reached 4 per cent. I then ordered him to omit all bread and increase the Clemens's solution to 5 drops three times a day, and further to increase one drop daily. On the 25th, a week later, he was taking 21 drops of Clemens's solution a day and the sugar amounted to 6.75 per cent. By August 1st, nine days later, the sugar had been reduced to 2½ per cent. He was now taking 25 drops a day and there was slight puffiness under the eyelids. I reduced the dose to 5 drops three times a day, and in eight days made another analysis, discovering 3 6 per cent. Thus, the glucose, which on a buttermilk diet had fallen to less than 1 per cent., but had again risen to 3 per cent., and during the administration of bromide of arsenic and an antidiabetic diet from which all bread was excluded had again declined to 2½ per cent., again began to increase while the same treatment was continued.

I then placed him on the solution of lithium carbonate and sodium arseniate,[1] directing him to drink not less than one quart and not more than two quarts of the solution in twenty-four hours. After he had been on the treatment for three weeks a specimen of the urine had a specific gravity of 1.042 and contained 3.6 per cent. of glucose—that is, it remained at the same point as while he was taking the bromide of arsenic. Another analysis eleven days later gave precisely the same result while the quantity of urine had again increased 50 per cent. He complained also of severe pains in his feet and legs, and of obstinate constipation. I then added twenty grains salicylate of sodium three times a day together with an aperient pill of blue mass, comp. ext. of colocynth and hyoscyamus. Thirteen days

[1] In preparing the solution in this and other instances I directed simple non-carbonated water while the original prescription of Martineau's called for carbonic acid water. I have been unable to discover any difference in result whether carbonic acid water or non-carbonated water was used as the menstruum.

later the sugar had fallen to 1.4 per cent., while the pains in his feet and legs had disappeared, and the quantity of urine was normal. The pill had been efficient in regulating his bowels. I may add that in my experience the symptoms of true diabetes are invariably aggravated by constipation and torpor of the liver. Two weeks later the quantity of glucose had again risen to 4½ per cent., later to 5 per cent., but still later it had fallen to 4.2 per cent. for evening urine, the previous analyses being of morning urine.

It will be seen that in this case the use of buttermilk was followed by a decided reduction in the quantity of sugar, a reduction which exceeded that under any other treatment adopted. But it was not permanent. Nor was that under the bromide of arsenic and anti-diabetic diet more permanent. I cannot myself think that the substitution of buttermilk, which I here permitted, could have altered the result. Indeed, on theoretical and practical grounds, one would expect the result to be even more satisfactory. For, in the first place, the fat is at least as much removed in the buttermilk as in the skim-milk, and in the second place, much of the sugar of milk of skim-milk is converted into lactic acid in buttermilk, while the experience of Cantani goes to show that lactic acid is an efficient remedy in diabetes.

Another striking instance of the effect of a pure skim-milk diet in diabetes mellitus is the following: A very active and successful business man, aged fifty-two, consulted me in June, 1884, with diabetes mellitus, which he had apparently had for three years. As is the case with so many at that time of life, he was so little inconvenienced by the symptoms, that he could hardly be made to realize its seriousness. When he came under my observations, he had, however, the thirst, dryness of mouth, and polyuria, and an analysis discovered 7½ per cent. of sugar with a specific gravity of 1.037. The treatment instituted was purely dietetic without milk, except a glass or two at meals. The effect was prompt. In a week the specific gravity was 1.031, and it contained 5 per cent. of sugar. The thirst and polyuria had diminished. In another eight days the sugar had declined to 4 per cent., and by June 30th, 2½ per cent.

The other symptoms were so totally relieved that I saw nothing more of the patient until January of the next year, when he reported with 2½ per cent. of sugar in his urine, which had a specific gravity of 1.027. He remained under my care on a diabetic diet, variously strict, and with a corresponding range in the sugar, which I note was at various times 7 per cent., 2½ per cent., 6.6 per cent., 4 per cent., 2½ per cent., 3.3 per cent., etc. Continuing actively engaged in large financial schemes he did not report until December, 1886, when he said that he had been pretty well all summer, except in the early part of July, when he had an attack in which he seemed to lose partially the use of his limbs. He continued to be able to walk, although with difficulty. This condition passed off in a few days. He continued well until the day before his visit, when a similar loss of power appeared in his hands and legs, especially shown in a difficulty in signing his name. The urine contained 3.3 per cent. of sugar, but there was no undue thirst, and he did not have to rise at night to pass water.

On January 1st, I was asked to meet the patient's family physician in the country. There had occurred total paralysis of the right arm, and partial loss of power of the corresponding leg. There was 2½ per cent. of sugar in the urine. He was immediately put to bed and upon a pure skim-milk diet. On the 5th the sugar was 2 per cent.; on the 9th there remained but ½ per cent., on the 13th a ¼ per cent., and on the 15th there was not a trace of sugar. Except a temporary return of a fractional part of 1 per cent. of glucose, the urine has remained entirely free, although the patient has long since returned to a selected diet of vegetables and meats, bread and the pure farinacea being alone excluded.

I could select from cases under my care others, all showing that glucose disappeared more rapidly and more thoroughly under a skim-milk, than under any other diet, while the practices of my friends, and notably that of Dr. Weir Mitchell, furnish similar results, and I now recall a case in which I was associated with Dr. Mitchell, which has been under observation for at least three years, where the patient is essentially well while limiting himself to a skim-milk diet, but who invariably has a return of symptoms when this diet is departed from, even though it be substituted by an anti-diabetic diet. As I have said elsewhere, it is not always necessary to restrict diabetics to a skim-milk diet, but when other measures fail I resort to it with more confidence than in any other measure.

A third case shows strikingly the difference in the effects of a skim milk and unskimmed milk diet. An army officer, aged forty-three, came under my observation March 1, 1887. Two years earlier sugar had been discovered in his urine. When he came under my care he was living principally on skim milk, with a quart of Vichy daily, and passing about five quarts in the twenty-four hours, with a specific gravity of 1.024. The quantity of sugar was 2.09 per cent. He had, however, no thirst, or other symptoms of diabetes. I directed a continuance of the skim milk, and by April 15th the sugar had fallen to less than one-half per cent., while the specific gravity of the urine was but 1.013. He was ingesting six and a half quarts of skim milk, one quart of Vichy, and passing seven quarts of urine a day.

We then began to substitute unskimmed milk, and during the week terminating May 23d, he used nothing but unskimmed milk. The urine sent to me for examination, although having a specific gravity of 1.028, contained 3.4 per cent. of glucose. His tongue was coated, and he had a very unpleasant taste in his mouth. During the week ending June 9th the specific gravity ranged from 1.040 to 1.045, and although no analysis was made, the sugar had evidently increased. During the following week he went upon a selected anti-diabetic diet of eggs, stewed kidney, beefsteak, sliced tomatoes, cottage-cheese, stewed okra and celery, drinking at the same time two quarts daily of the solution of carbonate of lithium, and arseniate of sodium, and from three to

five pints of skimmed milk. The specific gravity fell to 1.022, but there was no analysis. This large ingestion of liquid was accompanied by a corresponding increase of urine, which did not, however, exceed six pints. At the end of the following week under the same general methods, except that no skim-milk was taken, a portion of the twenty-four hours' urine, forty-six and a half ounces, had a specific gravity of 1.030, and contained but two per cent. of sugar. In consequence of the combined treatment, it is impossible to say to what the improvement was directly due, but the patient himself was inclined to ascribe it to the lithium carbonate and sodium arseniate solutions. The case shows, however, the inferiority, if not the harmfulness, of unskimmed milk as compared with the skim-milk. It is difficult to explain why this should be the case, as it is well known that the digested fats do not pass through the liver, but through the lacteal system, and, therefore, on theoretical grounds the fat of unskimmed milk should not embarrass the liver, at least until it comes round to the liver again by the hepatic artery. It is, nevertheless, true, that unskimmed milk, so long as the disease continues, is a diet which fails to produce the results of skimmed. It has, however, happened to me that the use of unskimmed milk is attended by a reduction in the amount of urine and sugar contained therein, especially if it be gradually substituted for the unskimmed.

It is true that Dr. Flint in his sweeping declaration does not draw any line between the effect of skimmed and unskimmed milk, and it may be that his conclusions are based upon the use of unskimmed milk only. To me it is quite inexplicable how any one who has tried the skim-milk diet at all, should have come to a different conclusion from so many others, as well as myself.

NOTE.—Since the above was written the continued use of the lithium carbonate and sodium arseniate solution has satisfied me that it is fully as efficient as Clemens's solution of bromide of arsenic, although far from having the specific effect claimed by Martineau. It should be remembered, however, that Martineau says the remedy is especially useful in cases with a history of arthritic symptoms, "either articular or in the form of biliary or urinary lithiasis." I do not think attention has been called to this by others who have referred to this treatment.

THREE UNUSUAL CASES OF DIPHTHERIA.

BY F. C. FERNALD, M.D.,
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CASE I. *Membrane extending from throat to external ear; use of trypsin; recovery.*—Male, aged six and a half years, white; has Pott's disease of two years duration, affecting mid-dorsal vertebræ; has had discharges from ears since early infancy, and for past nine months. Whenever the ears were syringed, some of the fluid passed into the throat and escaped from the nose, indicating perforation of both membranæ tympani, thus permitting the injected fluid to impinge directly upon the fenestræ of the inner ear, in consequence of which the intralabarynthine pressure became altered and the patient was made dizzy and nauseated, sometimes vomiting. The left ear had not been discharging for about four weeks.

March 3, 1887. Patient began to complain of slight sore throat, but was not seen by me until two days later, when examination of throat revealed a deposit of doubtful character on the right tonsil; it was easily removed with a mop, except a small piece, size of a large pinhead; the tonsils and fauces were neither reddened nor swollen to any noticeable extent, and there was but very little enlargement of the submaxillary glands; very slight fever; pulse good. He was not in bed, but was subdued and disinclined to play; directed him to be put to bed at once, and isolated.

4th. Considerably prostrated; membrane now covered about one-third of right tonsil, and a deposit was beginning on the left one.

6th. Membrane has entirely disappeared, but the mucous membrane of the fauces and pharynx was much congested, dark red in color; considerable swelling and some tenderness at the angle of the jaws and upper cervical glands on right side; complains of severe pain in right ear; last night had a smart hemorrhage from the right nostril; no coryza or hemorrhagic discharge from nose to-day; very weak.

Up to this time the treatment had been two grains of calomel every two hours till bowels became loose, then every four hours; stimulants were also given. Henceforth the calomel was discontinued, stimulants increased in quantity, and a poultice ordered over the ear and neck.

7th. Passed a sleepless night on account of paroxysms of excruciating pain, which he referred to the middle of his forehead; right ear now discharges muco-pus freely; right parotid gland swollen and tender; no longer any pain in swallowing; general condition good; poultice to be continued; discharge from ear to be removed with absorbent cotton, boracic acid insufflations; stimulants.

8th. Tragus swollen and tender, mastoid slightly so; pain in head still persists with unabated severity; *no membrane* to be seen in the external auditory canal; treatment continued with the addition of morphia to relieve pain, and syrup of phosphates of iron, quinine, and strychnine.

9th. Dr. C. W. Richardson made the visit with me. We found the external auditory canal filled with a diphtheritic deposit which extended into the concha of the ear, covering the inner surfaces of the tragus and antitragus, and partially filling the incisura intertragica; the external surface of the former not covered by membrane, but swollen, injected, and painful to the touch. The membrane could not be dislodged without force; any attempt to do so was painful and caused the subjacent skin to bleed. In accordance with Dr. Richardson's suggestions, I directed the ear to be thoroughly syringed with a weak solution of boracic acid every hour, after which the external auditory canal and the concha were to be filled with a solution of equal parts of water and liquor calcis; this solution was to remain in contact for five or ten minutes, then powdered boracic acid was to be insufflated in the ear; poulticing was discontinued.

10th. General condition not so good; membrane

has extended over the entire concha; swelling of parotid and neck much greater; treatment continued as before. A mixture containing *trypsin* was prescribed:

℞.—Trypsin . . . . . gr. xxx.
Sodii bicarb. . . . . gr. x.
Aq. destillat. . . . . ℥j.
S. as directed.

I directed the trypsin to be used in place of lime-water solution as soon as it could be procured. The mother was told to syringe the ear every half hour, then to fill the external auditory canal with the trypsin mixture and to paint it over the concha.

11th (A.M.) Trypsin had not been used as directed; only one drop each time had been put into the canal, but had been painted on faithfully. However, the *membrane has entirely disappeared from the concha*, leaving an excoriated surface. The trypsin was now directed to be warmed (which I had inadvertently omitted previously) and to be applied every fifteen minutes, the ear being thoroughly syringed beforehand. The external auditory canal is still nearly filled with membrane; at no time since it has been present has any of the fluid passed into the throat, nor has any dizziness followed syringing. (P.M.) Since last visit, the trypsin mixture has gradually passed into the throat, as if it made a passage for itself through the diphtheritic deposit. The membrane is said to come away in small flakes when the ear is washed out; the deposit is thinning, and extends less far toward the meatus. The parotid is much less tender. I directed the trypsin to be applied every two hours and twice in the night.

12th. Membrane is disappearing very rapidly; swelling of parotid and neck greatly diminished. Trypsin every two hours.

13th. No membrane to be seen; the entire external auditory canal is excoriated and reddened; swelling of tragus and neighboring parts entirely gone. Trypsin discontinued.

For the past few days, patient has been unable to retain anything in the stomach, so that it was necessary to resort to nutrient enemata; a mixture of bismuth and creasote was given by the mouth.

16th. Stomach no longer irritable; is hungry; wants to be dressed and get up.

From this date his convalescence has been rapid and satisfactory; no paralysis has yet occurred.

REMARKS.—The extension of diphtheritic membrane to the external ear is such a rare accident that most otologists do not even mention it in their books. Those who do speak of it—*e. g.*, Politzer, think that it is almost exclusively in scarlatinal-diphtheria that it is found. Doubtless in my patient, the chronically inflamed mucous membrane of the middle ear afforded a very fertile soil for the diphtheritic deposit, and the previous perforation of the membrana tympani allowed its extension without hindrance to the external ear, where the parts were already irritated from the long-continued discharges.

It is interesting to note that the deposit in the throat was not at all extensive, and that the involvement of the ears seems to be an extension of the membrane from the naso-pharynx, where a fresh deposit took place after that on the tonsils had disappeared. The epistaxis and the sudden and marked increase in the swelling of the cervical glands appear to me to indicate plainly the very moment that the naso-pharynx first became affected.

On account of the accessibility of the external ear, both to observation and to treatment, I had hoped to decide definitively the value of trypsin as a solvent of diphtheritic membranes.

But just how much was due to the trypsin, and how much to the mere macerating effect of the watery solution in which it was suspended, and also to the natural tendency of the membrane to exfoliate, is very uncertain.

This much, however, was observed, that while under the lime-water treatment, the membrane was evidently extending, yet very soon after the trypsin began to be used this tendency to spread was checked, and within twenty-four hours the thinnest part of the deposit, namely, that in the concha, had disappeared and within three days not a vestige of membrane was visible in the ear. Moreover, after the first few applications, the trypsin mixture opened a passage for itself through the obstructed external auditory canal into the throat. On the whole, I am inclined to regard trypsin with favor, and shall certainly try it again at the first opportunity.

CASE II. *Diphtheria, paralysis of the diaphragm; death.*—Female, æt. six years, colored. Illness began Oct. 5, 1886; was first seen by me four days later, when patches of diphtheritic membrane were found on both tonsils, and on velum palati, with moderate enlargement of submaxillary glands. During the next few days the membrane continued to spread and to increase in thickness until on the 11th of Oct. it covered the whole of both tonsils, the pillars of fauces, the uvula, and the velum palati; the neck was enormously swollen. Eight days later the membrane had entirely disappeared, and the neck was of natural size. The voice, however, had been noticed to have a nasal intonation for a few days previously, and there was slight difficulty in swallowing, liquid coming back through the nose; during the entire attack there was but little fever; the prostration was excessive.

The treatment was tincture of chloride of iron and chlorate of potassium, and the following gargle:

℞.—Liquor. sod. chlorinat. . . ℥iv.
Aquæ menth. pip. . . . ℥ijss.
Glycerine . . . . . ad ℥iv.

This gargle was not distasteful to the patient, and controlled the fetor completely. Brandy was given freely. Oct. 21. Syrup of the phosphates of iron, quinine, and strychnine, and syrup of iodide of iron were substituted for all other medication. She improved slowly but progressively, and as I did not anticipate any further trouble, I ceased my visits on Nov. 2d.

About a week afterward I was summoned to see her again. She had been seized suddenly the night before with very high fever and vomiting. In the interval between my last visit and this time, paresis had developed in both legs, and in the muscles of the neck also, to such a degree that the head drooped forward upon the chest. She could

raise her head, however, but could not hold it erect for more than a few seconds; there was a good deal of trouble in deglutition, as the velum palati was now paralyzed completely. I prescribed a simple febrifuge. The next day found her about the same, except that the fever was much less. Prescribed $\frac{1}{24}$th grain of strychnine in suppository three times a day. On the following morning she was extremely weak, wholly unable to swallow, could not rid the pharynx of mucus, which was very abundant and tenacious; respirations were labored, but not accelerated; examination of lungs negative. Strychnine continued; nutrient enemata with brandy ordered. In the afternoon the embarrassment of respiration was greater; the breathing was almost entirely costal, the abdomen scarcely moving. Strychnine continued.

11th. (A. M.) Could swallow liquids more readily, but they caused coughing. (P. M.) Seems brighter and stronger; great quantity of mucus in pharynx. Administered $\frac{1}{32}$d grain strychnine hypodermatically.

12th. (A. M.) Passed a very restless night, but there were no toxic symptoms from the strychnine. Rids the pharynx of mucus with less trouble. (P. M.) General condition unchanged; almost no action of the diaphragm, as shown in the act of coughing, particularly. Strychnine suppositories continued.

13th. Lividity of nails and hands; respiration exceedingly labored; paralysis of diaphragm now complete, being shown by the fact that the epigastrium and the hypochondria were drawn inward during inspiration instead of being curved outward, as normally. Moreover, the protrusion produced in health by the descent of the diaphragm could not be felt. The lower ribs, during inspiration, were raised excessively and with a heaving motion. The cervical accessory respiratory muscles being already paralyzed could not be brought into action, hence there was but very little motion of the upper part of the thorax. Strychnine continued; mustard plasters applied to back of neck and to chest, and heat to extremities.

14th. (A. M.) Much to my surprise, could now swallow milk and brandy without the least trouble; otherwise her condition was the same. Gave $\frac{1}{96}$th grain strychnine, hypodermatically. (1 P. M.) Much worse; hypostatic congestion of lungs had now developed; mucus accumulating rapidly in trachea and bronchi. Gave $\frac{1}{96}$th grain of strychnine and four minims of tincture of digitalis and tincture of belladonna, hypodermatically. (8.45 P. M.) In my absence patient died very quietly, having become very cyanotic. There was no evidence that the strychnine had produced its toxic effect.

REMARKS.—Paralysis of the diaphragm is mentioned in our text-books as one of the rarest among the sequelæ of diphtheria, but when it does occur, the case, as a rule, terminates fatally. It seems very odd that this child should regain the ability to swallow so completely, and yet be so near to death. Whether the strychnine was of any service, or whether it did harm, it is impossible to say. At first I hesitated to employ it on account of the elevation of temperature, which, however, was never above 101.5° after I began to use it. The sufferings of the patient were dreadful to behold, and the utter inability to relieve them by any thereapeutic measures was profoundly impressed upon me.

CASE III. *Diphtheria with extensive disturbance of sensation.*—Female, æt. ten years, colored. When I first saw her she was three weeks convalescent from a moderately severe attack of diphtheria. The only trouble she complained of at this time was great difficulty in walking (not so much from weakness, as from unsteadiness of gait), and slight difficulty in swallowing, fluids returning in part through the nose. I found that she was analgesic in legs and arms, but for lack of time deferred making a thorough examination until several days subsequent. Prescribed $\frac{1}{16}$th grain strychnine in solution, three times a day, and syrup of iodide of iron.

The following are my notes of what was discovered at the next visit: Nasal intonation of voice; paralysis of velum palati; gait ataxic, worse when the eyes were closed; inability to stand steady with the feet together and eyes closed; patellar reflex absent; some muscular weakness of legs, especially the right one, and of the right arm; complete loss of sense of smell as far as could be detected by spirits of camphor, cologne water, and kerosene; sense of taste absent over entire tongue; says she cannot taste salt, pepper, or strychnine, which I applied; hearing apparently normal; she has been very short-sighted for several years, but thinks she cannot see as well as formerly; no satisfactory test of sight could be made; complete analgesia was found over nearly the entire body, including the face and head, the exceptions being a circumscribed space in the palms of both hands, and in the soles of both feet, also along the sides of the spine in the dorsal region, but even in these parts the sensation of pain was much diminished. At any of the analgesic parts a pin could be thrust entirely through a fold of skin without the least pain to the patient. The mucous membrane of lips, mouth, and tongue, also, could be pricked as hard as possible, without producing the least pain. There was great diminution of the tactile sensibility. This was tested by means of a rough æsthesiometer in the shape of a pair of carpenter's dividers, with very sharp points. Nowhere could she detect that she was being touched with more than one of the points, even if they were four or five inches apart. She was also unable to distinguish heat from cold. For this test, two vials, one filled with hot water, the other with cold water, were used.

Several other physicians examined the patient subsequently, and found the same condition that I did, so that there was no deception; the girl was unusually intelligent, and very willing to submit to examination. There was no evidence of hysteria, either now or in the past.

The strychnine was continued in the same dose ($\frac{1}{16}$th grain) for several weeks without any upleasant effects, except for the first two or three days, during which there was slight stiffness of the jaws and neck, and a feeling of general uneasiness.

After one week of treatment she began to complain of the bitterness of the medicine; could taste

other things also; her gait was improved considerably. Two weeks later, could smell for the first time, and was able to swallow without difficulty. She continued to improve, and, in about six weeks from my first visit, all the abnormal conditions had disappeared, and she was perfectly well.

REMARKS.—It is not infrequent to find more or less disturbance of sensation preceding or accompanying diphtheritic paralysis, but usually confined to the paralyzed parts. I have not been able to find any case reported in which the disturbance of sensation was so great and so extensive, as in this patient. Such cases are, probably, quite rare, but I believe not so rare as one would at first suppose, for my patient was quite unaware of her condition, which would have escaped unnoticed without the very careful examination that was made.

USTILAGO MAYDIS.

A STUDY OF THE DRUG WITH REFERENCE TO ITS EMPLOYMENT AS AN OXYTOXIC.

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THE group of the Ustilagineæ, or smuts, of the natural order Fungi, as classified by Fischer de Waldheim, embraces a large number of species which are scattered throughout the various known countries of the globe, the United States laying claim to over twenty distinct varieties. Included in this number are some which have especially attracted the attention of scientists, and of these the ergot of corn, Ustilago maydis, has of late attained a prominent position.

Ustilago maydis, corn ergot, or corn smut, as it is variously known, is the parasitic fungus which is found infesting the young ears and tassels of the common maize or Indian corn. It appears as irregular swellings of a bright steel-gray color, which become darker as they increase in size, and as they mature are filled with a brown-black powder, the spores of the growth.

Strange as it may appear, this fungus, though inhabiting what may be called the American staple of food, and though known to botanists[1] for over a century, has never been thoroughly studied as to its chemical analysis and therapeutic properties, though from time to time, since its first introduction to scientific notice, it has received a limited degree of attention from pharmacists and physicists.

In one of the earliest papers on the subject, Mr. Crissler[2] reported as the result of his investigations in the analysis of the growth, the discovery of secalin, propylamin, and other main constituents of the ergot of rye, and suggested that the drugs, being chemically similar, might be possessed of like therapeutic values. This invited investigation, and since then various reports and monographs on the drug have been published, especially within the last four or five years.[1]

It is not the object of the present article to discuss at large the results of the labors of the different investigators. After careful deliberation they have variously recommended its employment in the treatment of all maladies in which the use of ergot would be indicated. This paper, however, will be confined entirely to a consideration of the main therapeutic value of the drug, namely, as an oxytoxic.

The attention of the medical profession was first turned to this property of ustilago by the fact that pregnant cows fed on corn infested with this parasite, almost invariably threw off their young within a week's time. This created considerable interest as to whether a like effect would be produced in other cases, and bitches and other pregnant animals were treated to the drug, all promptly aborting. By reasoning from analogy, naturally the question arose as to whether the drug would not be valuable in parturient women when there was marked uterine inertia or persistent post-partum hemorrhage, the old stand-by, ergot, having frequently failed to perform its rôle in such cases. Certainly, all the indications seemed to tend in this direction.

Once suggested, it was not long before scientific practitioners tested the practicability of the logical conclusions which had been arrived at. In 1877, Estachy[2] records the successful employment of ustilago in a case of suspended labor pains, and in the same year Dr. C. Henry Leonard[3] reports similar cases, in which he had used the drug with marked success. These results have from time to time been confirmed by others, who have strongly advised the adoption of the drug as a substitute for ergot in like conditions.

During the past three months, May to August, while serving as resident obstetrician to the maternity wards of the Philadelphia Hospital, the writer enjoyed the opportunity of testing the efficiency of Ustilago maydis in those cases in which the parturient pain had either almost or entirely died away after complete dilatation of the os uteri had been accomplished—that is, during the second stage of labor. Through the kindness of his friend and colleague, Dr. M. J. Donohoe, he was also given the privilege of employing the drug in similar cases under his charge. The record was as follows:

CASE I.—Frances C., colored, age twenty-three, III-para, R. O. P. Labor began 7 P.M., May 3d. At 11 A.M., May 4th, the pains had considerably subsided, though the os was fully dilated and the occiput had descended in the parturient canal midway between the superior and inferior straits.

11.52. Pains feeble. Administered twenty minims ustilago.

12.12 P.M. Pains very powerful and effective. Rotation of the occiput now accomplished.

12.15. The membranes ruptured.

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[1] Jussieu, Linnæus, J. A. Planer, 1709; Tillet, of Bordeaux, 1755; Abbe Tessier, 1783; Leveille of the Société Philomatique, of Paris, 1837; the Tulasne brothers, 1846, and more recently Fischer de Waldheim, Wollf, Winter, Prillieux, and others.

[2] Charles W. Crissler, Inaug. Thesis, Amer. Journ. of Pharm., 1861.

[1] Dr. James Mitchell, Inaug. Thesis, Univ. of Pa., 1883; Dr. Robert A. Taylor, Inaug. Thesis, Jeff. Med. Coll., 1886, and others.

[2] National Dispensatory, Maisch and Stillé, 3d edition.

[3] Am. Journ. of Pharm., 1877.

12.24. Delivered of a healthy male child, weight seven pounds.

CASE II.—Mary J., age thirty, II-para, L. O. A. Labor began 3 A.M.

9.05 A.M. Os fully dilated, head engaged. Pains weak and inefficient. Gave 15 minims ustilago.

9.30. Pains more severe. Membranes ruptured.

9.37. Pains weaker; gave 15 minims ustilago.

10.05. No increase in the force of the pains; gave 20 minims ustilago.

10.40. Still no noticeable effect; gave 30 minims ustilago.

11. Pains stronger, more frequent, clonic in character.

11.30. Delivered of healthy male child, weight 7⅝ pounds.

CASE III.—Eliza H., age eighteen, I-para, L. O. A. Labor began 4 A.M. Pains weak and inefficient from the first.

2.27 P.M. Os dilated, head engaged. Gave 20 minims ustilago.

2.50. Pains much stronger and increasing in force.

3.50. Delivered of healthy male child, weight 5¾ pounds.

CASE IV.—Sophia K., age forty, II-para, R. O. A. Labor began 9 A.M., May 13th. Continued at irregular intervals throughout the day and night.

9.05 A.M., May 14th. Pains every fifteen minutes, weak and without effect. Gave ʒj ustilago.

9 25. Pains stronger and occurring every minute and a half.

9.56. Pains growing weaker. Gave ʒj ustilago.

10.50. Still weak. Gave ʒj ustilago.

11.10. Pains stronger, clonic in character.

11.20. Delivered of healthy female child, weight 5 pounds 15 ounces.

CASE V.—Anna W., colored, age thirty, I-para, R. O. A. Labor began 12 P.M., May 21st. Admitted to the wards 2 A.M., May 23d.

4 A.M. Pains entirely subsided. Gave ʒj ustilago.

4.35. Slight pains. Gave ʒj ustilago.

4.45. Pains increasing in severity.

5.12. Delivered of a healthy female child, weight 7½ pounds.

CASE VI.—Ada C., colored, age twenty-two, II-para, L. O. A. Labor began 8 P.M, May 31st. Pains continued throughout the night and morning of June 1st, when, the head being fully engaged, they gradually died away, ceasing during the afternoon.

11.31 P.M. Gave ʒj ustilago.

12. Pains strong and natural. Head advancing.

12.30. Delivered of a healthy male child, weight 9¼ pounds.

CASE VII.—Mary H., age twenty, I-para, L. O. A. Labor began 8 P.M., June 5th. Pains were strong and frequent during the dilatation of the os uteri, and continued throughout June 6th at irregular intervals. Complete dilatation accomplished at 4.30 P.M.

7 P.M. Head engaged. Pains becoming weaker.

9.10. Administered ʒj ustilago.

9.30. Strong, efficient pains. Head advancing.

9.47. Delivered of a healthy female child, weight 8 pounds.

CASE. VIII.—Elizabeth T., age twenty, II-para, R. O. A. Labor began 11 P.M., June 13th.

6 A.M. Pains quite weak. Patient sleeping during the intervals.

7 A.M. Pains entirely suspended. Gave ʒj ustilago.

7.35. No pains as yet. Gave ʒj ustilago.

8. Slight pains, increasing in force.

9. Pains strong; head advancing.

9.25. Delivered of a healthy male child, weight 9¼ pounds.

CASE IX.—Mary T., age twenty-three, II-para, L. O. A. Labor began 11 P.M., July 4th. Though the patient had a stout physique, the pains throughout were extremely feeble.

10 A.M. Head resting on the perineum. No pains for fifteen minutes.

10.25. Still no pains. Gave ʒj ustilago.

10.50. No effect noticed. Gave ʒj ustilago.

11.20. Has occasional weak pains. Vomited some, part of the ustilago in the ejecta.

11.45. Weak pains at long intervals.

11.54. One severe pain. Delivered of a healthy female child, weight 9 pounds.

The above comprises all of the cases within the three months in which it was deemed necessary to employ the drug to shorten the duration of labor. Before proceeding, it may be as well to state that the patients were all in good physical condition, that all were at term, and that all made a rapid and complete recovery.

Having, now, this record before us, let us endeavor by a careful examination of the cases, to group the results of our experiments, that we may the more clearly ascertain the value of the drug. Three or four points seem to stand out prominently, demanding our consideration.

1. *The toxicology and physiological action of the drug.*

No cases of poisoning in man by the drug are on record. That it is, however, possessed of toxic properties in large doses has been proved by Mitchell.[1] He found that in the lower animals, in large doses, it acted violently upon the spinal cord, paralyzing first the sensory, later the motor tracts, finally involving the motor and probably also the sensory nerves. Like ergot, then, it is probable that the chief force of the drug, in toxic doses, is expended upon the nerve centres, producing a toxic paralysis.

As may be understood, our studies on the physiological action of ustilago were necessarily limited. After the administration of the drug in three instances, notably in Case IX., there was considerable nausea, followed in the latter by vomiting of the ustilago, together with the other contents of the stomach. This nausea seems to be of a similar nature to that produced by the ergot of rye, and calls for no further discussion.

The action of ustilago upon the uterus has been more carefully noted. After the ingestion of a sufficient amount, in from twenty minutes to half an hour, the pains, if present, are increased in severity, in frequency, and in duration, presenting a marked *clonic* character, following each other in frequent

[1] Dr. James Mitchell, Inaug. Thesis, Univ. of Pa., 1883.

succession, with a decided intermission between each. In this respect it differs decidedly from the action of ergot, which, in full doses, produces one continuous, *tonic* spasm of the uterine muscle. It is this property of ergot which has, when administered before the delivery of the placenta, produced in so many instances the irregular contractions of the uterus, of which the hour-glass is a well-known example. The employment of ustilago seems to be entirely free from such unpleasant complications.

In addition to being a valuable adjuvant in stimulating weak uterine contractions, ustilago seems to possess the property, which some years ago was ascribed to quinine, namely, of exciting uterine pains when entirely suspended—(see Cases V., VIII., and IX.). This has been noticed by Leonard and others.

As to the time required for the action of the drug to become apparent, it may be said that it differs in different cases, depending, undoubtedly, upon the rapidity with which it is absorbed from the gastro-intestinal tract and carried into the system. In the above record, in only two instances (Cases VIII. and IX.) did it require over thirty-five minutes before the ustilago acted upon the uterine tissues, and in the latter case it will be remembered that most of the drug was ejected by emesis. In the remaining seven cases the average time required was twenty-five minutes.

The effect produced by ustilago upon the other unstriped muscular tissues of the body has not been inquired into. Probably it produces the same increase of intestinal peristalsis and the same rise in the arterial pressure due to vaso-motor spasm as is produced by ergot. This is yet open to investigation.

2. *The indications for the employment of the drug.*

It may be noticed that in all the above cases the ustilago was not administered until complete dilatation of the os had been accomplished. Whether or not a disastrous effect would be produced by the administration of the drug prior to the commencement of the second stage of labor cannot be stated. As yet, that question has not been decided. From the study of the physiological action of ustilago, we should think all danger of the irregular contractions of its compeer, the ergot of rye, would be precluded, and that if there were any possibilities of the exigencies of the case demanding its use, it might be employed with impunity during the first stage of labor. At present, however, we shall consider the first indication for its use to be the failure of the pains, with *complete dilatation of the os uteri.*

In none of the cases was the drug employed until the pains of labor had either become so weak that they were inefficient to accomplish the expulsion of the fœtus, or until they were entirely suspended. This, then, we consider the second indication for its use, namely, the *inefficiency or entire suspension of the parturient pain.*

After the ustilago had been taken, it may also be noticed that in no case was there the slightest tendency toward a post-partum hemorrhage. In each case, after the expulsion of the placenta, the uterus remained in a state of firm contraction. While, during the three months the great majority of the remaining cases, in which the customary ergot had been employed, showed no tendency whatever toward this alarming accident, however, in two instances was there such an occurrence demanding prompt attention. The third indication, then, for the employment of ustilago we shall consider to be *a condition of uterine inertia threatening or producing post-partum hemorrhage.*

3. *The dose and mode of administration.*

The preparation of ustilago employed in all reported cases, as well as in our own, was a good fluid extract. The dose of this varies from one-half to two drachms, one drachm being a fair average. This may be repeated at intervals as required. Should it be necessary, it may be used hypodermatically in doses of from five to fifteen minims.

Finally. *The advantages of ustilago over ergot.*

Dr. Frank H. Potter in a paper on the "Proper Use of Ergot in Obstetrical Practice,"[1] closes his article with a series of ten conclusions. In these he states that when administered during labor the action of ergot is uncertain, producing irregular contractions, rigidity of the os, with interference of the placental circulation, or too rapid expulsion of the fœtus, jeopardizing the maternal tissues. He also asserts that the life of the child is endangered through absorption of the oil of ergot, and that indirectly the drug may prove a cause of puerperal septicæmia by preventing the removal of every portion of the placenta and membranes. His last conclusion is as follows: "The proper use of ergot in obstetrical practice is limited to those cases in which, after the expulsion of the placenta, the uterus refuses to contract, or having once contracted, shows a tendency to secondary relaxation. Even in these cases reliance should not be placed upon it alone, but its action should be supplemented by the other means used to provoke uterine contraction."

When compared to this formidable array of objections the employment of ustilago seems much to be preferred to that of ergot. It does not produce irregular contractions with all the consequent complications and sequelæ; containing but two and a half per cent. of fixed oil, while ergot contains from twenty five per cent. to twenty-eight per cent., the dangers of absorption are reduced to a minimum; and, finally, as it can be procured at a cost of fifty per cent. less than that of ergot, it seems to be on a fair highway toward the supplanting of the latter in obstetrical practice, should the results of the investigations thus far be confirmed by subsequent researches.

PHILADELPHIA HOSPITAL.

SPIRILLUM, FINKLER AND PRIOR, IN HEPATIZED LUNG-TISSUE.

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THE invariable presence of a specific microbe, the so-called comma bacillus, in the intestinal tract of cholera patients was first demonstrated by Koch.

[1] Buffalo Med. and Surg. Journ., Sept. 1886, quoted in Therapeutic Gaz., Nov. 15, 1886.

The interest which after the publication of his investigations attached itself to forms resembling this comma bacillus led to the more careful study of two other microbes closely resembling this. One, found by Finkler and Prior in the stools of patients affected with cholera nostras, gave rise to much discussion at the time as to the real value and significance of Koch's discovery. Careful observation, however, of the growth of this second form in culture media showed well-marked and constant differences between it and Koch's comma-bacillus. Moreover, its presence in cholera nostras has been demonstrated in a few instances only, and it has been found by W. D. Miller in a tooth cavity and by another observer in the cæcum of a man who committed suicide.[1] A third form found by Deneke in cheese was likewise differentiated from Koch's comma-bacillus by means of cultivation, so that the latter still remains to be found in localities other than the intestines and dejecta of cholera patients.

Recently these comma-bacilli have been classed as spirilla. Although there may be some doubt as to the strict propriety of this nomenclature, it is certainly the best at our disposal, and in this paper they shall be so denominated.

Several months ago, in examining cultures from hepatized lung-tissue of a cow, the result of pleuropneumonia, I found in every one of twelve tubes several kinds of bacteria. Among others, a spirillum was present in almost every tube, the close resemblance of which to the spirillum of cholera and to the others mentioned above was of sufficient importance to warrant a more careful examination. Various media, including nutrient gelatine and agar-agar, blood serum and beef infusion had been inoculated by adding a minute bit of recently hepatized tissue (red hepatization) to each tube. The various microbes, chiefly bacilli, which had multiplied in the cultures after one or two days, had, very probably, found their way into the lung-tissue shortly before or after death and multiplied there. The heat was very great at the time and no special precautions had been taken by those removing the lungs from the body to keep foreign bacteria away. The source of the spirillum cannot, therefore, be inferred. It may have come from the ice which had been placed upon the lungs during transportation. After the rather laborious process of isolating it from several liquefying bacilli various culture media were inoculated in order to observe its mode of growth. Through the kindness of Dr. E. O. Shakespeare I was enabled to compare it with cultures of the three spirilla thus far discovered. By making cultures of all at the same time and exposing them to similar conditions of temperature, relative alkalinity, and concentration of culture media, accurate comparisons could be made.

The spirillum under consideration resembles the spirillum Finkler and Prior so closely that it may be regarded as a slightly modified variety of this microbe. For the sake of brevity it will be denominated spirillum β, the original spirillum of Finkler and Prior, spirillum α. The spirilla mentioned above have been very carefully described in many publications by writers on cholera, so that the reader will be spared any unnecessary repetitions.[1]

In tubes and on plates, spirillum β liquefies the commonly used 10 per cent. gelatine *much more rapidly* than spirillum α. At a temperature of 22° to 24° C. the plate containing colonies of the former was completely liquefied on the third day, that containing colonies of the latter only partially so. The colonies[2] of these two forms do not differ in any other way. Before liquefaction sets in, they present a homogeneous, circular disk with sharp, regular margin and a darker central nucleus which appears on the second day.

In tubes spirillum β liquefies the gelatine twice as rapidly as spirillum α during the first two or three days. Later on, both microbes seem to experience the same difficulty in the downward liquefaction of the gelatine, and after the first week they look alike.

On boiled potato spirillum α grew best at 20°–24° C. Spirillum β multiplied very slightly at this temperature. A feeble growth may appear at 35° C., which then resembles that of spirillum α in color and consistency. In general the latter grows far more vigorously on potato than the former.

In liquid media such as simple beef infusion, or beef infusion containing 1 per cent. peptone, both made slightly alkaline with sodium carbonate, the multiplication of this organism and of the other spirilla deserves some attention. The employment of liquid media as an accessory means of distinguishing them from one another, has not received any attention whatever, although it is of considerable value as the following shows: If the spirilla of Koch, Finkler, and Prior, and Deneke, be added to beef infusion and the tubes placed in a temperature of about 35° C. the following changes may be seen after twenty-four hours. The tube inoculated with Koch's spirillum will be clouded and the surface of the liquid covered with a delicate, but complete membrane. Beneath this the upper strata will be quite turbid from the very abundant massing of spirilla. The infusion inoculated with the Finkler and Prior spirillum is barely opalescent, without any trace of a surface membrane. The third tube inoc-

[1] Flügge: Die Mikroörganismen, 2d ed., p. 385.

[1] Very good descriptions will be found in Flügge (l. c.).

[2] In studying these it is very important not only to know the concentration of the gelatine employed, but to keep it in as uniform a temperature as possible, since both of these conditions have a marked influence upon the characters of the colony in its development. It is exceedingly difficult to realize a uniform, low temperature, both in summer and winter. In summer, the temperature in this climate is above the melting point of 10 per cent. gelatine for weeks and months. In winter a thermo-regulator usually fails within the narrow limit between the average temperature of the laboratory and that at which it is desirable to maintain the gelatine. A given per cent. of gelatine at a low temperature is equivalent to a larger per cent. at a higher temperature. The density, in other words, is increased when the temperature falls. We know, for instance, that the most important diagnostic feature of the cholera spirillum is the peculiar appearance of its colonies on the gelatine plates—a certain irregularity of outline combined with a marked refrangibility as of "particles of glass." The writer has, however, seen these very colonies present smooth, sharply outlined disks, differing from those of the other spirilla only in size. This loss of characteristic features was due to an abnormally low temperature at the time. A few days later, another plate growing in a higher temperature presented colonies of the usual type.

lated with the Deneke spirillum remains permanently clear. These differences have reappeared with each succeeding test, so that they may be regarded as constant; the same is true of beef infusion containing 1 per cent. peptone.

That the spirillum of Koch has a tendency to rise to the surface in culture media and there form a membrane, is not a new fact. It has been made use of by investigators (Schottelius, Büchner, Gruber) in demonstrating the presence of this microbe in cholera stools. A minute portion of the latter is added to beef infusion and the whole allowed to stand in an open vessel in a warm place. After a few days, sometimes only after five or seven days (Gruber) the spirilla will be found on the surface. It must be borne in mind that by this process a number of bacteria are introduced into beef infusion at the same time with the spirilla, which may interfere more or less with the growth of the spirilla at the surface. That the three spirilla may be thus readily distinguished in pure beef-infusion cultures has not yet been suggested, so far as I know. It should not be lost sight of in endeavoring to identify the spirillum of Koch in cases of suspected Asiatic cholera.

The spirilla α and β entirely agree, so far as their growth in liquids is concerned. In a few cultures of β, a membrane has appeared, but only after standing undisturbed one or two weeks.

In milk kept at 22° C. there is for nearly two weeks no macroscopic change. At the end of this time, however, spirilla α and β have caused precipitation of the casein. The precipitate contracts into a very firm mass at the bottom of the culture tube, and a layer of acid watery fluid, equal in bulk to about one-half the original volume of milk, rests above the coagulum. A parallel culture of the spirillum of Koch shows even at the end of three weeks no change. When placed at 35° C. the process of precipitation and settling sets in in four or five days with the spirilla α and β, while no change is observed in cultures of the spirillum of Koch after two weeks.

The microscopic examination of the various culture media reveals organisms not differing appreciably in size or form from the other comma-bacilli. It is, in fact, quite impossible to distinguish them by this means alone, especially when we bear in mind that all vary slightly in dimensions and form according to the composition of the culture medium and the age of the culture. The short comma form always predominates. In older cultures, particularly in beef infusion, numerous perfect spirilla are found consisting of from one to very many complete revolutions of the spiral body. When dried on cover glasses and stained in an aqueous solution of fuchsin prepared from an alcoholic solution these longer spirals are, as a rule, resolved into commas, and the true spirillar form is more or less obliterated. The comma forms are exceedingly active in their movements, even when the cultures are two or three weeks old. They dart to and fro with great rapidity, or revolve about one of their extremities as a fixed point. The spirilla whose movements are slower show very well the corkscrew-like revolution about their long axis as they move across the field.

This spirillum was destroyed by a ten minutes' exposure to 58°–60° C. When taken from gelatine cultures and dried on sterile cover glasses, it was incapable of infecting beef infusion after four hours, indicating that in cultures four to five days old no resistant spore-state had been formed. No inoculation or feeding experiments were made upon animals.

The rather tedious and laborious work of identifying this microbe has led to the following results: A comma-bacillus or spirillum not distinguishable from the spirillum of Koch under the microscope was found in hepatized lung-tissue. After isolation and cultivation in different media it resembled the spirillum Finkler and Prior very closely, and, was, therefore, easily distinguishable in this way from Koch's cholera spirillum. It differs from the former only in liquefying gelatine more rapidly and in growing more feebly upon boiled potatoes. The name, spirillum of Finkler and Prior β, is provisionally suggested.

The conclusion which was reached by Koch that the spirillum found by him is exclusively associated with Asiatic cholera is not modified but rather confirmed indirectly by these results. They throw no light, however, on the supposed relation between cholera nostras and the spirillum of Finkler and Prior.

CASE OF ACUTE ERGOTISM OCCURRING AFTER THE INGESTION OF A FLUIDOUNCE OF THE FLUID EXTRACT OF ERGOT.

BY LAURE HULME, M.D.,
OF WEST CHESTER, PA.

TAKING into consideration the widespread use of ergot, cases of acute poisoning from the drug are of very infrequent occurrence—in fact, almost unknown, and when met with are ascribed either to an idiosyncrasy on the part of the patient or to some impurity of the preparation.

On the other hand, epidemics of a peculiar nature, due undoubtedly to the continued ingestion of large quantities of ergotized breadstuffs have occurred in Europe and have been described by the various writers on the subject.

Single cases of chronic poisoning from the long-continued use of ergot, resulting in gangrene of the extremities, etc., are occasionally seen. In Caspar's *Vierteljahrschrift*, Bd. xiv., 8, 46, the following record of experiments with ergot is given:

"A quantity of bread which contained sixty grains of ergot, eaten at once, produced a burning sensation in the stomach and unconsciousness. These symptoms appeared after half an hour and continued in some people from 10 A.M., until 3.30 P.M. In another experiment, sixteen grains of ergot in bread were given at one time. This produced increased warmth in the region of the stomach, increased flow of saliva, nausea and headache. In the course of an hour all these symptoms disappeared. The action of large doses of ergot, mixed with bread and eaten for a length of time, depends, as found by experience, upon the constitution of the individual, the age, mode of life, etc. Ten grain doses can be taken for a considerable time."

The following case well illustrates the acute toxic effects of the drug in a mild form: Mrs. M., aged

forty-eight years; married twenty-eight years, two children, youngest fourteen years old, has suffered for several years from the presence of fibroid tumors of the uterus, causing menorrhagia. One of these tumors, being pedunculated, was removed two years ago by the écraseur. One submucous nodule of about the size of a hickory-nut was allowed to remain. The patient recovered from the operation without any bad symptoms. The menorrhagia was lessened for several months, but again increased. She had had hot vaginal injections in connection with the remedies usual in such cases, with little benefit from any. On the second day of the menstrual period, the flow being excessive and proving more uncontrollable than usual, at 10 A.M. I administered one small teaspoonful of Squibb's fluid extract of ergot, and left the patient quite comfortable. On returning, less than forty minutes afterward, I found her in a half fainting condition. The countenance was swollen, pallid, and denoted great anxiety; the respirations were shallow and frequent; the extremities were swollen, and the hands increased about one-fourth in size. The abdomen was also much enlarged. Pulse was frequent, weak and irregular. The pupils were equally dilated and vision indistinct. She complained of great dizziness and nausea. The flow continued as before and no signs of uterine contraction were evident; she had no pain.

I administered whiskey ʒj, and aromatic spirits of ammonia, gtt. x, every half hour, until at 2 P.M. she felt stronger and her pulse was normal in frequency (although very full and quick). The pupils were still widely dilated and vertigo prevented the patient from leaving the bed. The swelling of the face and extremities continued to increase until 7 P.M. In twenty-four hours the symptoms began to decrease and gradually subsided, the dizziness and indistinct vision being the last to disappear and lasting several days.

One of the most interesting points in this case was the absence of all evidence of uterine contraction, unless the nausea can be referred to this cause, as it is by Dr. Keating in a case mentioned in Ringer's *Therapeutics*, when the nausea attendant upon the administration of ergot in a case of fibroid tumors was much increased by the introduction of the finger into the os; and also in a case which came under my own observation where the introduction and dilatation of a sea-tangle tent caused little pain, but great and constant nausea and vomiting until the dilatation was complete, when all symptoms ceased entirely.

As to what to ascribe the deleterious effects of the drug in this case, I am at a loss to determine. The preparation was freshly procured from a reliable druggist, and has not caused any disagreeable symptoms in the patients to whom I have administered it since. The patient had frequently taken ergot on former occasions and in as large a dose.

In reference to the frequency of acute ergot poisoning, Dr. H. C. Wood remarks: "Although I have given the fluid extract in ounce doses, I have never seen it cause distinct symptoms. Fatal abortion has several times been produced; but I know of but two instances of decided poisoning in a non-pregnant person." (Wood's *Therapeutics.*) According to the U. S. Dispensatory, "But one fatal case of poisoning has occurred, except when abortion has been produced." In a case occurring in the practice of a medical friend, Squibb's fluid extract was given to arrest a persistent discharge of blood after an abortion, and although its use was kept up for over a week (ten ounces were given in nine days) there was no perceptible effect of any kind whatever that could be traced to the drug.

In an article in *Med. Times and Gaz.*, vol. ii., 1879, entitled "Acute Poisoning by Ergot, followed by Tolerance of the Drug," a very interesting account is given of a case under the care of Dr. Meadows, in which, after the removal of a fibro-cystic polyp from the anterior wall of the uterus, a half a drachm of powdered ergot was given to remove any shreds of growth which might remain: this did not only cause decided toxic effects, such as "marked depression, nausea, headache, swelling of the hands, etc.," but it set up powerful uterine contractions, which lasted for two hours, when upon vaginal examination there was found presenting a tumor the size of an orange. The same toxic effects in an exaggerated form followed the administration of the drug in the same dose a week later. About two weeks after this second administration of ergot it was again given; but three half-drachm doses at intervals of six hours produced only slight toxic effects and no evidence of uterine contraction. In this case there was a "weak dilated heart, with marked systolic murmur."

Dr. John M. Keating (*Medical Record*, 1880) reports a case of labor in which "there were placental adhesions of great firmness, and consequently more than the usual amount of hemorrhage," and in which there was given by the doctor before leaving, fʒij of the fluid ext. of ergot, and subsequently, through a misunderstanding on the part of the nurse, a drachm every half hour; the amount given altogether being half a fluid-ounce. In this case there were alarming symptoms of poisoning, which, however, yielded to prompt treatment addressed to stimulation of the circulation.

Dr. S. J. Radcliffe, in commenting upon Dr. Keating's report, says that he had reported a case in which he ordered a drachm of Squibb's fluid ext. of ergot every half hour, and the patient took in twelve hours one and a half ounces without injurious effect. Never having had a case of ergot poisoning in his own experience, he is rather of the opinion that the "placental adhesions of great firmness, and in consequence more than ordinary amount of hemorrhage," in Dr. Keating's case were prominent factors in producing the symptoms described.

Dr. M. F. Leary, of Gayloid, Kansas, writing to Dr. J. M. Keating, says (*Ibid.*, Dec. 4, 1880):

"Some two years ago I had about the same experience with ergot that you have described. The case was one of miscarriage in which half an ounce of Squibb's fluid ext. of ergot was given by error (one drachm every half hour), followed by symptoms much resembling those in your case. In my case, I am satisfied that there was neither hemorrhage, shock, nor idio-

syncrasy at work, but that it was purely a case of poisoning by ergot."

One of the most interesting cases of acute ergot poisoning on record is that reported by Dr. G. S. Oldright (*Canada Med. Journal*, 1870): in this case there were first symptoms of spasm of the arterioles and diminished heart action (dizziness, syncope, coldness of the surface), followed by reaction, shown by most intense congestion of face and head, which latter condition very slowly subsided.

A CASE OF PERICHONDRITIS OF THE CRICOID CARTILAGE.

BY LOUIS JURIST, M D.,
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MR. H., æt. thirty-seven, married, of good habits and good family history, was treated by my friend, Dr. De Young, for a mild attack of bronchitis, limited to the upper lobes, from Sept. 9 to Sept. 12, 1885, inclusive. He again presented himself on Sept. 19th, complaining of huskiness and some cough without expectoration. There was no dysphagia, no pain, no external swelling, but considerable fever. The following day he remained much the same; his cough, however, inducing vomiting. On the 21st improvement began, cough diminished, the voice cleared up, and on the 22d, after a friendly chat with his physician, he expressed desire to follow his usual clerical work. This he was cautioned not to do, but disregarded the admonition and left for his place of business the following morning. He remained at his books until evening, and on his way to take a street-car home, noticed dyspnœa marked enough to necessitate resting several times while walking a block. At 7.45 P.M., he was suddenly seized with a suffocative attack. Dr. De Young, living in the immediate neighborhood, was at once summoned, and finding his circulation good, and no cyanosis present, considered his symptoms due to spasm. Shortly after he appeared easier and expressed a wish to sleep.

Dr. De Young having hastily sent for me, we reached him at 9 P.M., and found that he had just ceased breathing. An immediate laryngotomy and artificial respiration failed to restore him.

Post-mortem fifteen hours later, limited to the thoracic cavity. Lungs crepitant and pale; the right bound down by old adhesions. Heart normal, pale, filled with fluid blood, and clots. Contrary to expectation, laryngeal œdema was conspicuous by its absence. The laryngeal surface of the epiglottis was crimson in spots; there was arborescent injection of both arytenoepiglottidean folds. Both ventricular bands, bright red. Vocal bands, particularly the right, reddened and infiltrated. About one-third of an inch below the right vocal band, there was a gangrenous patch of mucous membrane about one-third of an inch in diameter; on the left side, at a point exactly corresponding to this, a very much smaller spot of gangrene was also noticeable. The trachea was slightly red in patches. On splitting the larynx from behind (which should not have been done) the knife slipped into an irregular cavity on the right side, from which about half a teaspoonful of thick pus exuded. This cavity extended under the gangrenous patch above mentioned, and showed a curious condition of the cricoid cartilage, and loss of perichondrium. There was also a well-marked plate of ossification. On the other side, a similar but much smaller cavity was found, by carefully following a minute opening in the gangrenous mucous membrane.

The incomplete post-mortem permitted, together with the absence of a more extended history of the patient, make the determination of the etiology, as well as the exact mode of death in this case, almost impossible. The condition of the larynx and the lungs excludes tuberculosis. Acute primary perichondritis, running a rapid course, or a late syphilitic infiltration of the cricoid perichondrium, seem to be the only explanation. In the absence of the patient's history, and an ante-mortem laryngoscopic examination, this point must remain undetermined. As there was no extrusion of any portion of the cartilage, nor an amount of pus sufficient to cause suffocation, death was apparently due to prolonged laryngeal spasm. The case is interesting not only from the pathological standpoint, but as illustrative of a possible, though rare form of sudden death.

839 N. BROAD STREET.

HOSPITAL NOTES.

PHILADELPHIA HOSPITAL.

Service of BARTON C. HIRST, M.D.

TUBAL PREGNANCY; RUPTURE OF THE CYST DOWNWARD; FORMATION OF A RETROUTERINE, EXTRAPERITONEAL HÆMATOCELE; RECOVERY WITHOUT OPERATION.

(Reported by RICHARD C. NORRIS, M.D., Resident Physician.)

A. N. was brought in ambulance to hospital July 19th with the following history: Æt. thirty-eight years, II-para, youngest child five years of age. After two days of hard work as a washerwoman, she was attacked with sudden, cramp-like pain in the hypogastrium, increasing in severity until she fainted. Partial recovery, with profuse sweating, great prostration and alarm were followed by two successive fainting spells and the discharge of blood from the vagina. This occurred six weeks subsequent to her last menstrual period.

Abdominal palpation disclosed a tumor in right iliac region. Vaginal examination showed an upward and forward displacement of the cervix behind the symphysis, with an elastic, fluctuating, and tender tumor occupying the posterior vaginal wall, and extending in the direction of the right broad ligament. The tumor became firmer and tense after two or three days. A close watch was kept for any discharged shreds of membrane, but none was found, and there was no history of any before coming to hospital. When admitted the temperature was 99¼°, and for sixteen days ranged between 98⅘° and 100⅘°, once rising to 102°, but quickly falling after being catheterized. The pain and tenderness largely disappeared three days after admission. On the twelfth day the tumor rose slightly above the pelvis, the pain and tenderness returned, lasted about one week and again disappeared, without subsequent recurrence.

The patient was allowed to get up two weeks after admission and was practically well, serving in the capacity of a ward assistant until September 12th, when she was granted a few hours liberty and did not return to the hospital.

At the last vaginal examination, made a few days before she left, the uterus had almost regained its normal position, the tumor was apparently solid and considerably contracted, although not to the extent expected from the length of time it was under observation.

MEDICAL PROGRESS.

OIL OF TURPENTINE IN DIPHTHERIA.—ROESE, of Hamburg, treated 58 cases with a mortality of 3 (5 per cent.), as follows: oil of turpentine was given in teaspoonful doses three times daily; it was mixed with spirits of ether in proportion of four minims of ether to the teaspoonful of oi of turpentine. In addition a tablespoonful of a 2 per cent. solution of sodium salicylate was given every two hours; externally an ice bag was used, and locally gargles of 1 per cent. warm solution of potassium chlorate. The results were.

1. Rapid diminution in pulse rate and temperature.
2. The subjective symptoms were rapidly alleviated.
3. The duration of the illness was shortened.
4. An exacerbation of the local process was not observed after the first dose of oil of turpentine.
5. Danger of suffocation occurred but once, when tracheotomy was done.

Roese considers pencilling the throat to be generally futile as done in private practice. He exercised great caution in pushing oil of turpentine in anæmic individuals and those having diseased hearts. Excessive heart action, from any cause, was carefully treated. The nourishment given was bouillon, old port wine and milk; to quench thirst ice and aërated fruit juices were used. As soon as the patient was free from fever turpentine was discontinued. In ordinary cases from 3 to 5 drachms sufficed; as much as 15 drachms were sometimes used. No intoxication was observed. Paralysis occurred once, and recovery followed the use of potassium iodide. — *Therapeutische Monatshefte*, October, 1887.

ANTIFEBRIN AS A DISINFECTANT.—DR. S. A. VAN LEER has been prosecuting a number of researches in the Hygienic Laboratory at Groningen on the antiseptic properties of antifebrin (acetanilide). When added to milk, so as to saturate it, acetanilide prevents it from turning sour; similarly, albumen can be kept from becoming putrid. It does not, however, seem a suitable substance for dressing wounds, as it does not easily dissolve or become moist, and irritates the surface of wounds. Dr. van Leer examined the effects of solutions of antifebrin of various strengths on several kinds of bacilli, and found that the development of many of them was not by this means prevented; consequently he does not think that the suggestion of Leube to employ antifebrin for surgical dressings is likely to prove of any advantage.—*Lancet*, October 15, 1887.

SACCHARIN.—In addition to the formula of FISCHER (THE MEDICAL NEWS, October 22, 1887, p. 480), the following are convenient modes of administering this substance:

Liqueurs may be sweetened with saccharin in the proportion 1 to 8000. A saccharin syrup may be made with

Saccharin	30 parts.
Carbonate of soda	11 "
Water	100 "

Saccharin and quinine may be given as follows:

Saccharin	1 part.
Carbonate of soda	1 "
Water	100 parts.

With this fluid mix thoroughly one part of sulphate of quinia, and drink at once.—*Therapeutische Monatshefte*, October, 1887.

AVULSION OF INGROWING NAILS UNDER HYPNOTISM.—DR. S. L. TRIVUS, of St. Petersburg, relates a case in which he removed an ingrowing nail from the great toe of a cook after a hypnotic state had been induced in the patient. The operation lasted about twenty minutes. At first the woman occasionally moved her foot about, but when the author had suggested to her that no more pain was to be inflicted, and that the foot must be kept at rest, she sat quite quiet until the matrix of the toe was incised. At that point of the operation she shrieked out, and when questioned about the cause, stated that "a dog had just bitten her." After applying the dressing, Dr. Trivus woke her up, and asked her whether she would consent to the operation. She hesitated a little, and then said, "Yes, go on." On his pointing to her bandaged foot, however, she at once guessed that all was over already, and burst into laughter followed by hysterical sobs. No pain was felt until the next day, when she became somewhat lame. Dr. Trivus also relates an instructive case in which a man of twenty-five, after having been hypnotised for the sake of experiment and subsequently awakened, could not return to his normal state for several hours: when left alone, he was seized with a kind of hypnosis, and on his way home fell into a deep swoon in the street.—*British Medical Journal*, October 15, 1887.

THE EFFECT OF IODOFORM VAPOR UPON THE CHOLERA GERM.—BUCHNER, of Munich, has made a series of experiments to determine the effect of iodoform upon Koch's comma-bacillus. He found that when iodoform, in powder, was placed in tubes containing culture material infected with bacilli, there remained an upper zone where the bacilli did not develop. After several days the iodoform was removed, when the bacilli at once invaded the zone. It was evident that the bacilli were not destroyed, but that their action was inhibited. Pure iodine was substituted for iodoform, when no such inhibitory action resulted. Other volatile antiseptics, among them carbolic acid, were inert. Buchner considers the value of iodoform to consist in its power of penetrating, by its vapor, the deeper tissues, where it increases their resistance to bacteria, and inhibits bacterial growth. It is, then, an indirect antiseptic. We are, therefore, in therapeutics, not to rely upon the direct action of the drug. As a contrast,

Buchner cites quinine, whose effect upon the tissues is direct and immediate.—*Münchener medicinische Wochenschrift*, No. 25, 1887.

THE CAUSES OF TYPHOID FEVER.—Investigations made by Beumer, Peiper, and others, seem to have demonstrated that a ptomaine produced by the typhoid bacilli when injected into animals may cause a disease resembling typhoid fever. The ptomaine was discovered by Brieger, and named by him "typhotoxine." It is this substance, and not the germ directly, which is the cause of typhoid fever in man, according to the most recent theory. The *London Medical Record*, in commenting on these researches, draws the following conclusions from them: "1. The symptoms and alterations observed in animals in which cultures of typhoid bacilli had been injected are due to the toxic substances secreted by these bacilli. 2. The noxious germs, which secrete typhotoxine, are reproduced in the intestinal canal. From these the ptomaine is taken up by the circulation, and carried to all the organs liable to be affected by this poison. 3. It is most probable that the same takes place in abdominal typhoid fever of man. 4. A first infection induces immunity against the injurious effect of a later infection, even of large quantities of the toxic substance. 5. Further experiments and careful clinical investigations are necessary in order to establish a scientific support of the theory of immunity from infections of sterilized cultures containing not more than a determined quantity of typhotoxine. 6. In case this theory be an ascertained fact, the reproduction of the same immunity in man would be justified by commencing with very minute doses of typhotoxine, which would be gradually increased according to the results obtained."

A CHEMICAL TEST FOR THE CHOLERA BACILLUS.—BUJWID, in the *Zeitschrift für Hygiene*, describes a chemical test for the detection of the presence of the cholera bacillus. He adds to a bouillon-culture of the bacillus from five to ten per cent. of ordinary muriatic acid. In a few minutes a rose-violet color appears, which increases in intensity for half an hour. It remains unchanged for several days. This reaction occurs in bouillon-cultures ten to twelve hours old, and in gelatine-cultures after twenty-four hours. The coloring is increased by heat. It is claimed by Bujwid that this color is characteristic of the bacillus of Asiatic cholera, and distinguishes it from all others.

CLINICAL POINTS REGARDING ERYSIPELAS.—LINDÉN believes that there is no relation between the severity of an operation and the liability to erysipelas afterward. The number of patients and number of wounds under treatment, have no bearing on the frequence of erysipelas. Meteorological conditions have no influence on the prevalence of erysipelas, excepting sudden changes in atmospheric pressure and temperature. The occurrence of erysipelas after operations is less dependent on the severity of the operation than on the infection of the wound with foul discharges.

The duration of erysipelas depends on its extent; it is least prolonged when upon the head and upper extremities, and most prolonged when on the lower extremities. Erysipelas endures longest in weak patients. Post-operation erysipelas is more prolonged than that occurring without an operation. Scar tissue and integument subject to irritation are more favorable to the spread of erysipelas than healthy integument. The first attack is generally most severe. After seven or eight months a recurrence is as severe as an original attack. Hypodermatic injections of alcohol and antiseptic dressings are the best treatment. — *Deutsche medicinische Wochenschrift*, October 13, 1887.

FORMULÆ FOR THE USE OF STROPHANTHUS. — ZERNER and LOEW have used tincture of strophanthus and Merck's strophanthine in Bamberger's wards in Vienna. They observed nausea and vomiting as occasional unpleasant after-effects. Their prescriptions were:

℞.—Tinct. strophanth. . . . . ♏ 23 to 45.
Aquæ destill. . . . . ʒ 5⅝
Syrup simpl. . . . . ʒ 5 to 7½.

The whole to be taken during twenty-four hours. Subnitrate of bismuth was given when diarrhœa occurred. Also:

℞.—Strophanthin (Merck) . . gr. $\frac{1}{30}$ to $\frac{2}{30}$.
Aquæ destill. . . . . ʒ 5⅝.
Syrup. simpl. . . . . ʒ 7½.

For use during twenty-four hours.—*Gazette Médicale de Paris*, October 15, 1887.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY FINELY POWDERED BORAX.—FEROGLIO, of Cagliaro, has treated five cases of phthisis by inhalations of compressed air laden with finely powdered, carefully dried borax. When reported, the treatment had persisted but fifteen days. The effects were an improvement of all the symptoms presented by the cases.—*Centralblatt für die medicinischen Wissenschaften*, October 8, 1887.

TREATMENT OF GONORRHŒA IN WOMEN.—SINCLAIR, in the *Medical Chronicle* for October, 1887, advises the following method of treatment, which has been introduced by Schwarz, of Halle:

"First of all, the vulva and vagina are thoroughly cleansed from the adhering secretion by means of a 1 : 1000 sublimate solution, then with the help of a Simon's speculum, the vagina and vulva, including every fold and recess, are energetically swabbed with a pledget of cotton-wool soaked in a one per cent. solution of the sublimate, and rubbed with it for several minutes, so that the superficial layers of the epithelium containing the gonococci are removed. The Simon's speculum, or some other with separable blades (such as Bozeman's, etc.), is essential for the purpose in view; by this means it is possible to distend the folds of the vagina to their utmost extent, and to obtain a complete controlling view of the whole process, so as to avoid missing any of the diseased patches. Special care is taken with the introitus, which contains numerous folds.

"The next step is copiously to dust over the vagina and vulva with iodoform, which is still more effectively applied by rubbing it into the mucous membrane with the tip of the finger.

"To complete the process, the vagina is with moderate firmness packed full of iodoform gauze.

"If the treatment is very painful, a thing which depends upon the intensity of the disease process, and the idiosyncrasy of the patient, a narcotic or anæsthetic must be administered.

"The process is of value only when thoroughly carried out, but then it is certain to succeed.

"If, as is usual in rubbing the vagina, there occurs extensive capillary hemorrhage, it is only a favorable sign, inasmuch as it shows that at the bleeding points the diseased epithelial covering is for the most part removed, and, at the same time, a large number of the superficial, perhaps diseased, capillaries are destroyed.

"The iodoform gauze is permitted to remain for three or four days, and then the whole process is repeated with the same thoroughness, and over the same area.

"After four or five days more the gauze is finally removed, and then, for eight to fourteen days, the patient carries out a copious irrigation of the vagina with a sublimate solution of 1 in 2000."

This process was hardly ever known to fail. The vagina is red and raw after the second tampon has been removed, and there is usually a copious purulent discharge, "but the gonococci are annihilated, and have for ever vanished."

ACID SOLUTIONS OF SUBLIMATE AS DISINFECTANTS.—LAPLACE has made a study of the effects of acid solutions of corrosive sublimate as disinfectants, and concludes as follows from his work, which was done in Koch's laboratories, at Berlin: Sublimate, with tartaric acid in solution, can be recommended as a surgical disinfectant dressing for the following reasons:

By combining the action of tartaric acid, we obtain the full action of sublimate in fluids and surfaces containing albuminoids. Infected wounds should be irrigated from ten to twenty minutes daily; a single thorough cleansing is enough for fresh wounds, after which a dressing of tartaric acid-sublimate gauze is applied.

Tartaric-sublimate gauze does not interfere, in any degree, with iodoform and the other substances commonly used in surgery. It gives in the laboratory and in practice better results than sublimate alone. It does not irritate wounded tissues. Sublimate dissolves better in solution of tartaric acid than in water alone. The compound solution does not decompose in the tissues or dressings, and is cheap.

Solutions may be made after the following formulæ:

Corrosive sublimate . .	1 part.
Tartaric acid	5 parts.
Water	1000 "

for irrigation.

For the preparation of dressings:

Corrosive sublimate . .	5 parts.
Tartaric acid . . .	20 "
Distilled water . . .	1000 "

may be used, in which dressing material should soak two hours, after which it may be wrung out and dried.

Laplace's investigations consisted of experiments in Koch's laboratory, and in von Bergmann's and Fehleisen's clinics. He had previously demonstrated that the efficiency of sublimate and carbolic solutions as germicides is greatly increased by the addition of hydrochloric acid. — *Deutsche medicinische Wochenschrift*, October 6, 1887.

TEA-DRINKING AND PHARYNGITIS SICCA. — DR. DOWNIE reports, in the *Practitioner* for October, 1887, that "Some three years ago I pointed out to students a form of dry pharyngitis occurring in badly fed, anæmic women, which I then in great part ascribed to the excessive use of cheap, and, therefore, inferior, tea. On inquiry it was found that those women had tea with almost every morsel of food of which they partook, and the tea, of a rank odor, was not simply infused, but literally *stewed*.

"For a time, in addition to proscribing the use of tea (recommending the substitution of cocoa or milk), I advised the liberal use of farinaceous food with milk, and prescribed a chalybeate tonic, under which the patients rapidly recovered. After a time I prescribed no medicine, directing the change of diet indicated alone, with the same beneficial results; but patients are never thoroughly satisfied unless they get a bottle, and as preparations of iron materially assist in the cure of the accompanying anæmia, I have returned to my former prescription. Those patients when asked if they use much tea confess to it freely, but add that since the throat became so dry they have quite lost taste for it—have 'turned against it.'

"Now in all such cases I look upon this form of dry pharyngitis, which does not involve the naso-pharynx as in *pharyngitis sicca*, as in great measure due to the gastric derangement—the dyspepsia—induced by the constant use of stewed tea shortly before, with, or immediately after meals, as well as to the local effect on the pharynx itself of this frequently-applied astringent and irritant lotion. And just as we forbid the use of tobacco in certain inflammatory conditions of the mouth and fauces, so the total abstinence from tea should in all cases be rigorously enjoined."

TESTS FOR THE PURITY OF ANTIFEBRIN.—YVON has found the following tests reliable, in studying the properties of the drug in the laboratory of Dujardin-Beaumetz:

1. It should possess no odor.
2. It should be perfectly white.
3. Heated on a platinum foil, it should give a colorless liquid.
4. When thus heated, it should be entirely volatilized, leaving no residue.
5. It ought not to give with hypobromite of sodium an orange-yellow precipitate.

This last reaction, which is very delicate, is obtained whenever acetanilide retains any traces of free aniline. — *Therapeutic Gazette*, Oct. 15, 1887.

ANTIFEBRIN IN THE FEBRILE DISEASES OF CHILDREN.—HIDOWITZ is quoted as follows on this point by *The Archives of Pediatrics* for October, 1887.

The author reports the use of antifebrin in fifty-three cases, including four of scarlatina, eleven of measles, eleven of measles with subsequent pneumonia, two of measles with tuberculosis, two of facial erysipelas, four of croupous pneumonia, two of lobular pneumonia, two of pleuro-pneumonia, four of bronchitis, three of tuberculosis, four of follicular tonsillitis, three of gastricismus, one of acute intestinal catarrh. An interesting fact is that at the end of ten or twenty minutes after the medicine was taken the temperature began to decline, and con-

tinued steadily until it reached its lowest mark. After remaining at this point for a short time it began to rise again. The rapidity with which the temperature declined seemed to depend not so much upon the size of the dose as upon the peculiarity of the child and of the disease. Another observation was the very favorable effect upon the general condition of the children. Those who had previously been restless and fretful became quiet and soon fell asleep. In several instances the severe symptoms connected with collapse were quickly relieved after the ingestion of the medicine. Scarlatina and erysipelas were more rebellious to the antipyretic action of the drug than any of the other diseases in which it was used, the temperature falling only a few tenths of a degree. In pneumonia occurring as a complication of measles, in croupous and lobular pneumonia, in measles complicated with tuberculous affections of the stomach and intestines, the antipyretic action of the drug was prompt and energetic. The pulse became fuller, its frequency being diminished, though not always in proportion to the decline of the temperature, the respiration became deeper and more quiet. The drug was given in the form of powder, and in doses of 1½ grains to children three or four years of age. To older children, 3 or 4½ or even 7½ grains were given. Small doses usually sufficed for poorly nourished children, the reaction being much more energetic than in more robust children. As much as 30 grains were given in the course of a day. The antifebrin never produced any perceptible effect upon the duration of the disease. In some cases of croupous pneumonia its use was accompanied by profuse perspiration, with cyanosis of the face and the ends of the fingers.

FORMULÆ FOR PURGATIVE MIXTURES.—In obstinate constipation:

Ol. ricini	℥ 7½.
Syrup. rhei.	℥ 5.
Alcohol	℥ 3¾.
Essent. menth. piper.	gtt. 11.

In one dose or two as needed.

As podophyllin is insoluble in water, a chemist has prepared a "liquor of podophyllin," containing one-sixtieth of a grain to fifty minims. This may be prescribed as follows:

Liquor of podophyllin	℥ 2½ to 3.
Decoction of aloes	℥ 7½
Tincture of capsicum	gtt. 5.

An agreeable purgative powder or mass results from the combination of the following ingredients:

Rad. jalap. pulv.	1 part.
Sennæ fol. pulv.	1 "
Sacchar. albæ.	1 "
Tamarind. pulp.	6 parts.

which may be partially dried and made into chocolate-covered tablets.—*Revue de Thérapeutique*, October 1, 1887.

STAB-WOUND OF ABDOMEN AND COLIC ARTERY; RECOVERY.—DR. JENKINS, of Henderson, Kentucky, reports the following case in the *Annals of Surgery* for October, 1887:

There was a cut in the mesocolon, involving about two-thirds of its thickness, situated about midway between its fixed border and the transverse colon. The cut was about three centimetres long, transverse in direction, and evidently made by the point of the knife. The clot being rubbed out of the cut, it began bleeding in a weak diffused jet. The bleeding vessels had retracted into the tissues of the mesocolon and could not be caught by forceps until the peritoneum on the superior surface was scissored up. The severed arteries were the main right branch of the arteria colica media and a branch thereof. Ligated proximal and distal ends with sublimatized catgut. Iodoformed wound. This part of the operation was most difficult, owing to the poor flickering light; several candle-moths also fell upon the peritoneal field of operation. Digital exploration of the wound in the wall of the belly was made beneath the guts. It was found to be transverse in direction, a little to the right from middle of the epigastric region, about five centimetres long, slanting inward to the right, the right rectus abdominis entirely severed, the circumference of the wound tightly strangulating the expressed bowel (thus probably preventing lethal hemorrhage from the arteria colica media). Systematic reduction was attempted in narcosis but failed. The wound was then enlarged by an incision extending from its inner angle to the umbilicus, after which restitution was effected. The peritoneum of the extrusion had become glazed and opaque from the long action of the carbolic acid. The various peritoneal apartments were sought out, particularly Douglas's sac and the recessus duodeno-jejunalis, and wiped with sublimate gauze; only light blood staining, serum seemed in excess. Air expressed, wound closed with eight deep silk sutures, snowed external wound under with iodoform, sublimate gauze dressing. The only bad symptoms that followed were decided intestinal tympany on third day with slight abdominal pain (no morphia used). His temperature on that day registered the highest—101°. He left hospital apparently well.

A NON-IRRITANT ANTISEPTIC LIQUID.—LÉPINE, who has studied the combination of various antiseptic substances, has found the following an efficient and non-irritant compound:

Corrosive sublimate	gr. $\frac{1}{10}$.
Carbolic acid	gr. 1½.
Salicylic acid	gr. 1½.
Benzoic acid	gr. ¾.
Chloride of lime	gr. ¾.
Bromine	gr. ⅙.
Hydrobromate of quinia	gr. 3.
Water	℥ 25.

This fluid may be used by parenchymatous injection or in dressing wounds.—*Journal de Médecine*, October 9, 1887.

RAPID ANÆSTHESIA.—DR. CORNING has used the following device, which he describes in the *New York Medical Journal* of October 22, 1887, as follows:

A strong, flat elastic tourniquet was secured around each of the patient's thighs, so as to arrest both the arterial and venous blood-flow in the same. By this procedure each limb was converted into a species of receptaculum for a considerable proportion of the total blood-mass, or, as a distinguished friend of mine who

was present put it, "about one-third of the man was cut off," and consequently it was only necessary to saturate the remaining two-thirds (of the total blood-mass). The ligatures being in place, the ether cone was applied over the mouth and face of the patient, and in about three minutes by the watch the patient was anæsthetized. On the completion of the operation, the ligatures were removed and the patient recovered from the effects of the ether instantly. This rapid recovery from the effects of the anæsthetic created considerable comment from the medical gentlemen present, and was certainly a very interesting phenomenon from whatever physiological standpoint one chooses to view it.

THE LIFE OF THE TEETH INDEPENDENT OF THE ROOTS.—ROSE, in a recent work published by Hirschfeld, of Leipzig, concludes, from the study of necrosis of the jaws, that teeth can continue to live after their roots have been entirely destroyed by resection of the bone, if the alveolar membrane and teeth are allowed to remain *in situ*.—*Deutsche medicinische Wochenschrift*, October 6, 1887.

CREOLIN VERSUS CARBOLIC ACID.—DR. E. VON ESMARCH, assistant in the Royal Hygienic Institute of Berlin, has made a series of experiments with creolin, a new disinfectant, which has been highly spoken of by Professor Fröhner, of the new Veterinary School of Berlin. Dr. von Esmarch made a number of comparative observations with carbolic acid on the disinfecting, deodorising, and antiseptic properties of creolin. Amongst other observations, he noted the effects of the two substances on fluids containing cholera, typhus, and anthrax bacilli. As a rule, creolin appeared to be much the more active. Similarly the offensive smell of various putrefying liquids was controlled much more readily by creolin than by carbolic acid. Creolin soap, too, showed itself more active as a disinfectant than corrosive sublimate soap.—*Lancet*, October 15, 1887.

USEFUL APPLICATIONS FOR "TOOTHACHE."—The following may be inserted into a carious tooth:

Camphor,	
Chloral	āā 5 parts.
Cocain. hydrochlorat. . . .	1 part.

An oily liquid results from the mixture.

Experience with cocaine has shown that in many cases it irritates the nerve to which it is applied, and that oil of cloves is more efficient.

Beginning superficial periostitis of the jaws may be promptly checked and the pain cured by painting with tincture of aconite and tincture of iodine, equal parts: the application should be entrusted to a physician only. —*Revue de Thérapeutique*, October 1, 1887.

THE HISTOLOGY OF REUNITED INTESTINES.—BISHOP concludes, from micro-photographs of sections made of intestines after suture:

First, that there are three distinct stages in the process of intestinal union, namely, primary, or peritoneal union; secondary, or the stage of contraction; and tertiary, or cellulo-fibrous union. Secondly, that each is complemental to the others, and that the process cannot be considered complete until the whole three have been passed through. Thirdly, that in considering the action of sutures upon the wall of the intestine, and in forming any judgment as to the best method of using them, regard should be had to each and all of these three stages.—*Medical Chronicle*, October, 1887.

TREATMENT OF DIPHTHERIA BY OXYGENATED WATER.—HOFMOKL has used the following in diphtheria, by the gastro-intestinal tract or locally:

Oxygenated water (2 per cent. solution)	ʒ 50.
Glycerine	♏ 45.

A teaspoonful may be given every one or two hours.

This may be given by inhalation. The effects of the medicine are an abundant salivation: the false membranes have in some cases been rejected in three or four days, and in others in six or nine days.

The medicine is a tonic against anorexia.—*Journal de Médecine*, October 9, 1887.

SALOL.—BIELSCHORVSKI, of Breslau, treated 27 cases of rheumatism with salol, of whom 19 were promptly cured; 2 resisted salol and yielded to salicylic acid; the remainder became chronic. Relapses occurred eight times, but yielded to salol. The drug was given in capsules, in doses ranging from 30 grains to 2 drachms in five hours. The smallest quantity which effected a cure was 3¼ drachms; the greatest quantity taken was 11 drachms. The disease was generally checked in three days; 1 case resisted treatment for ten days. In 4 cases mild affection of the heart were present, which disappeared. The urine showed the presence of carbolic acid, and gave a violet color with ferric chloride.

ROSENBERG, of Berlin, was not so successful. After the use of 90 grains to 2 drachms in twenty-four hours, a prompt effect was produced, but complications were frequent. One case resisted salol, but yielded to sodium salicylate promptly. Rosenberg also observed all the unpleasant effects caused by salicylates after the use of salol. The smallest dose which produced an effect was 1 drachm, given during twenty-four hours. Rosenberg considers salol a "masked salicylic acid."

FEILCHENFELD, of Berlin, obtained good results from 30 to 45 grains of salol daily, in cystitis and pyelitis, in acute cases, and also in hypertrophied prostate. Strangury followed the use of the drug in one case; in the others no ill effects were observed.—*Centralblatt für klinische Medicin*, October 15, 1887.

FIVE YEARS OF GASTRIC SURGERY.—MAYDL reports forty gastrostomies in five years in Albert's clinic in Vienna. There were thirty operations for carcinoma of the œsophagus, and ten for other œsophagea stenoses. Twenty-one patients recovered. Mortality fifty-seven per cent. Patients suffering from carcinoma perished sooner or later. Three patients were permanently cured of stenoses from other causes. In these cases the stricture was dilated by passing bougies from the mouth and emerging in the wound. Maydl considers gastrostomy a much more valuable operation for stricture of the œsophagus than œsophagotomy. He would perform it, if occasion offered, for recent injuries to the œsophagus. Two resections of the pylorus were performed; one patient recovered, and one died of peritonitis.—*Internationale klinische Rundschau*, Nos. 3–22, 1887.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 5, 1887.

THE CONTROL OF QUARANTINE.

Recognizing the paramount importance of preventing the importation of cholera into the United States, we published on Oct. 29th, in an extra issue of THE NEWS the Report of the Committee of the College of Physicians of Philadelphia to investigate the efficiency of our quarantine arrangements for the exclusion of cholera and other epidemic diseases. The report contains an exhaustive relation of the state of affairs existing at the ports of New York, Philadelphia, and Baltimore. It discloses many startling facts which cannot be regarded as less than highly disquieting, and which will doubtless even excite alarm in the minds of some, and we are forced to admit that it will not be entirely groundless. As the testimony of thoroughly competent and independent observers, a committee of one of the most conservative and respected medical bodies in America, it carries with it the weight of conviction, and conclusively proves the urgent necessity of a radical reform in our method of guarding the country against devastating epidemics with which we are, through foreign communications, from time to time threatened.

The quarantine establishments at Philadelphia and Baltimore are entirely unprepared and insufficient to prevent the spread of cholera, should either of them have the misfortune to be called upon to deal with a large number of immigrants with this disease among them, or its germs infecting their baggage. In the language of the report "there is no reason to believe, from the published official descriptions, that the conditions of the other ports of entry upon our Atlantic and Gulf coasts are in any respect superior," and indeed the same may, with equal justice, be said of the various ports along the lakes, through which thousands of immigrants annually reach the West, by way of Quebec and Montreal.

This country has been exposed to the introduction of cholera into one or more of her ports for the last four years. From the Mediterranean, from both coasts of South America, and from the eastern coast of Asia, this scourge might at any time during this period have been spread among us by the arrival of immigrants and baggage from infected places. Yet with all this warning and time for ample preparation, we find ourselves at last surprised by an attack which, because of its very tardiness, seems to have been entirely unexpected. The suspicious continuance of the disease among the immigrants, so long after their arrival and detention at the New York quarantine station, prompts an investigation, and a state of defences at New York, Philadelphia, and Baltimore is revealed, which, even if local interests alone were involved, can be characterized as nothing else than deplorable. Should, however, the germs of cholera finally escape or be permitted to pass beyond quarantine, they may not limit their onslaught to the nearest city, but may spread over the land and ultimately carry sorrow and loss to homes hundreds and even thousands of miles distant from the port where they entered.

The case of the "Independente" well illustrates how this may happen. A few days after their arrival and detention at New York for twenty-six hours, immigrants brought by this steamship from infected ports in Italy and Sicily reach Philadelphia, Baltimore, Syracuse, Chicago, and pass through St. Louis *en route* for Colorado, without any warning whatever from the quarantine officer of the port of entry. If they were not themselves affected with cholera, they carried with them baggage which had certainly been packed in infected districts, possibly in houses where cholera had raged. It has been stated that at least some of this baggage was not disinfected at New York, and it is safe, in consideration of all the circumstances, to affirm that none of it was effectually disinfected, even if the attempt had been made during the detention of twenty-six hours, inasmuch as neither the baggage nor the immigrants were removed from the ship until all were landed at Castle Garden.

The chief value of the work of the Committee will be improperly appreciated by those who are most interested, namely, the public at large, if it does not lead to an earnest effort to bring about an immediate and satisfactory improvement in the provision and proper administration of the means of protecting the health of the country. The abuses and the faults of an exclusively local quarantine, such as at present exists, are so natural and intrinsic

that we should by this time acknowledge the absolute need of a national protection of the general welfare by a national maintenance and administration of quarantine.

ACETPHENETIDINE.

IN the *Centralblatt für die medicinische Wissenschaften*, No. 9, p. 145, 1887, KAST and HINSBERG call attention to the antipyretic influence of this compound, which is chemically very closely allied to antifebrin. In appearance it is of a reddish-black color, insipid, odorless, and sparingly soluble in water and glycerine, very soluble in warm alcohol, but insoluble in acid and alkaline liquids, especially in the gastric and pancreatic juices.

When 45 to 75 grains of the drug were administered to a dog it produced rapid respiratory movements, somnolence, and vomiting, with uncertainty in walking. These symptoms continued for three hours and were accompanied by a cyanosis of the buccal mucous membrane. The blood was also darker in hue than normal, due to the presence of methæmoglobin. In the course of a few hours more, however, these signs passed away and complete recovery took place.

Reasoning from these experiments that the drug was only capable of producing harmful results when given in very large doses, these observers turned to the bedside for the clinical information which was the ultimate object of their research, and found that in cases of phthisis from 3 to 7½ grains decreased the bodily temperature two degrees without much effect upon the pulse, but with a moderate amount of perspiration. There was no disturbance of the appetite, no nausea, and no vomiting. These writers, therefore, believe the drug worthy of further trial and the attention of the profession.

Still other tests as to its value have been made by KOHLER, of Vienna, assistant to Bamberger, the records of which may be found in the *Wiener med. Wochenschrift*, Nos. 26 and 27, 1887. This observer used the drug in fifty cases of different diseases associated with fever, consisting of pulmonary phthisis (11 cases), croupous pneumonia (10 cases), typhoid fever (7 cases), and in puerperal septicæmia, pleurisy, pyæmia, and cerebro-spinal meningitis. The doses ranged from 3 to 7½ grains according to the age and susceptibility of the patient. He believes that its innocuousness is established, and he would not hesitate in pushing it strongly if need demanded it. Kohler also failed to discover any disagreeable effects produced by its ingestion, but evidently found more profuse sweating after its use than did Kast and Hinsberg.

The drug is eliminated by the kidneys, and changes the color of the urine to a dark-yellow hue, which becomes red on the addition of the perchloride of iron; and care must be exercised that the copper test be not used in testing for sugar, since the urine after the ingestion of acetphenetidine reduces a copper solution very strongly.

ON THE INCIDENCE OF ALBUMINURIA AMONG THE SICK.

WE have still much to learn about the condition under which albuminuria occurs, and the significance of this extremely common symptom. In the *British Medical Journal* of October 15th, there is a valuable contribution to the question by GRAINGER STEWART, who has investigated the incidence of albuminuria among the sick of all classes, with the following results: In 150 private patients, 36 showed albumen, of whom only 13 had Bright's disease. Of 150 indoor patients, in 74 the urine contained albumen, and of these 26 had Bright's disease. Of 100 outdoor patients, 19 responded to the tests, of whom 8 had Bright's disease. Of 50 cases in the Children's Hospital, 7 had albumen, only 1 of whom had morbus Brightii; of 50 cases in the Fever Hospital, 33 showed albumen; of 25 patients in the Maternity Hospital, the urine of 18 contained albumen. In 40 cases of alcoholism, acute and chronic, 19 were albuminuric.

Albuminuria is certainly more common in disease than is usually supposed. Some of the inferences drawn by the author from the facts stated are that Bright's disease does not account for one-half of the cases of albuminuria met with in practice; but it accounts for more than any other individual cause. The changes in the renal circulation due to cardiac and other maladies, and accidental cases due to admixture of blood and pus in the urine, rank next in order. Dietetic, cyclic, and simple persistent albuminurias are rare. The albuminuria of Bright's disease is more abundant than in that due to other causes, though at first in the waxy and cirrhotic forms it may be so slight in amount as to be shown only by picric acid, by which reagent alone in some of the digestive and nervous cases, and in those due to high temperature the slight amount of albumen may be detected.

Professor Stewart makes no attempt to explain the albuminuria of the various conditions, but is content, for the present, with the statements above noted, which, it is hoped, may direct anew the attention of practitioners to the important fact that the presence of albumen in the urine does not necessarily mean the existence of Bright's disease.

THE EXPOSURE OF THE STENOCARPINE FRAUD.

FOR the last month or six weeks there has been a growing suspicion that gleditschine or stenocarpine was not what it purported to be, and that a gross fraud was being perpetrated on the profession, which

is always alert to try a new drug without, perhaps, question as to its source or previous history.

In THE MEDICAL NEWS of last week DR. MARSHALL, of the University of Pennsylvania, published the results of a careful investigation, carried out by him, on the solution sold in the shops as stenocarpine, in which he found a large amount of cocaine, and a smaller quantity of atropine, or an alkaloid of the same group, there being no distinctive tests between it, duboisine, and daturine. Articles also appear in the *Pharmaceutische Rundschau* for November by NOOY, of Ann Arbor, and in *The Medical Age* of the 25th ult., by THOMPSON, in which results identical with those of Marshall were reached One of the New York firms which have been selling the substance has, too, within the last week published a disclaimer in which it pleads ignorance of the source of the alleged drug, and states that it has merely acted as agents of the manufacturers.

Moreover, it has been shown that the Gleditschia triacanthus possesses in none of its parts an alkaloid capable of allaying the functional activity of sensory nerves. The fraud does not stop here, however, for the solution is labelled as being of the strength of two per cent., while analysis proves the presence of over seven per cent. of solid matter, of which six per cent. or more is cocaine. This so-called two per cent. solution is retailed to physicians at one dollar and twenty-five cents a fluid-drachm, and its ready sale has, therefore, netted a handsome profit to its manufacturers.

An esteemed New York contemporary, three months since, first called the attention of the profession to the remarkable properties of this alleged new anæsthetic, and but a month ago, with its accustomed enterprise, laid before its readers an elaborate botanical description of the tree from which it was obtained, with beautiful illustrations of its leaves and branches to aid in its identification. Unfortunately, however, this has only tended to increase the harvest of those who, in duping our contemporary, have sought to impose this fraud on the profession.

In this connection we cannot but express the hope that in the future greater discrimination will be exercised by our journals as to the reliability of the statements to which they give currency, in order that they may protect their readers from, rather than expose them to grossly fraudulent imposition.

There are other features about this subject, which are of even greater importance than the mere discovery of the imposition, and are far from agreeable to the medical man who prides himself on the mental power and scientific conservatism of his profession. Lessons taught by such incidents as these, generally make their influence felt for a considerable length of time, and we hope that this one will, at least, teach physicians to look with distrust on any new drug, the history of which is shrouded in mystery.

Words cannot condemn with sufficient force the persons who have knowingly and deliberately carried out, with all its nicety of detail, this scheme. We do not know on whom the blame may be justly placed, but we do know that the momentary influx of dollars will never repay the men who have perpetrated the fraud.

PROF. HENEAGE GIBBES, of London, has been appointed to the Chair of Pathology in the University of Michigan. It is understood that Dr. Gibbes will accept the position, and will begin his work in February. With Dr. Klein, Dr. Gibbes constituted the English Cholera Commission to India, in 1884. Koch pronounces him one of the foremost of English bacteriologists.

THE Medical Faculty of the University of Michigan have been so much gratified by the attendance upon the three years' courses of nine months each, that they have unanimously petitioned the Board of Regents to establish an optional fourth year course, which shall be given in Detroit, and shall consist wholly of clinical specialties.

The new laboratories of histology and physiology are now being occupied, while the hygienic laboratory is in process of erection. But the Department of Hygiene has been established, and for the present year the work will be done in rooms in the chemical laboratory. Dr. Vaughan has been relieved of his work in Materia Medica, and has been made Professor of Hygiene and Director of the Laboratory. Mr. F. G. Nooy has been appointed Instructor in Hygiene. Dr. Conrad George has been appointed to the Chair of Materia Medica. The new laboratory of hygiene will not be ready for occupation before October, 1888. It will contain rooms for chemical analysis of foods, water and gas analysis, bacteriological work, a disinfecting chamber, and a cold room.

ON Sunday, October 23d, DR. JOHN G. JAY, Professor of Anatomy and Operative Surgery in the Woman's Medical College of Baltimore, performed the Cæsarean section upon a negro woman, aged twenty-seven years. The woman was not a dwarf, but was of good external development; internal examination, however, revealed an infantile pelvis, with a great narrowing of all the pelvic diameters. The antero-posterior diameter of the superior strait was estimated to be from one and three-quarters to two inches; hence it was deemed proper to perform the section rather than craniotomy. The operation was

done according to the method of Sänger, with three rows of sutures for the uterine wound, and a resection of the muscularis of the uterus. The child was born alive, but soon died. The mother is now in the seventh day, has had almost no fever, not much pain, no unusual lochia, and seems to be on the high road to recovery. The further report of this case will be awaited with interest.

THE medical men of British Columbia have obtained an act of Legislature of that Province requiring that every physician who wishes to practise there, shall pass an examination before the Provincial Medical Board. So, now, three of the provinces, Ontario, British Columbia, and Quebec, have raised around them a Chinese wall of protection, for the liberal profession of medicine. There is to be no reciprocity.

JOHN MURRAY CARNOCHAN, M.D., died in New York, October 28th, aged seventy years. His death by apoplexy was very sudden, he had been in his usual good health two hours previously. He was a native of Savannah, Ga. His predilections for surgery were early marked, and were fastened for life by his entering the office of Dr. Valentine Mott as a medical student. In 1847 he began practice in New York, and three years later was appointed surgeon-in-chief of the Emigrant Hospital, a position held by him for nearly twenty years. He was Professor of Surgery for many years in the New York Medical College (now extinct), and was the author of several works on operative surgery. He was Health Officer of the port of New York, from 1870 to 1872. His name is identified with the bold operation, first done by him in 1856, of exsecting the second branch of the fifth pair of nerves for facial neuralgia, and with a large and original experience in the field of arterial surgery.

REVIEWS.

DRUITT'S SURGEON'S VADE MECUM. Edited by STANLEY BOYD, M.B., B.S. Lond.; F.R.C.S. Eng.; Assistant Surgeon to the Charing-Cross Hospital; and Surgeon to the Paddington Green Hospital for Children. Twelfth edition. 8vo. pp. xvi. 985. Philadelphia: Lea Brothers & Co., 1887.

AN admirable edition of an old favorite. Few books have enjoyed a wider or longer sustained popularity, or have more fully come up to the ideal of a vade mecum than Druitt's *Surgery*. No less than 50,000 copies have been sold in England alone, while in this country the book has had extensive collegiate recommendation and Federal patronage. Mr. Boyd has revised, and, in great measure, rewritten the book, adding sections on surgical diagnosis, and giving greater prominence to pathology. The chapter on diseases of the eye has been omitted, and one on injuries of the orbit and its contents inserted instead. A large number of new, and some of them admirable illustrations, have been added, and the latest and best authorities are relied upon for the statements made, and the rules of practice laid down. Although Mr. Boyd says he has attempted to keep down the size of the book, from the enlarged field of modern surgery, and the additions to which we have referred, the vo ume has very considerably expanded in comparison with the "Druitt" of our youth. We have no hesitation in saying that the book is abreast of the times, and desirable for students, and especially for those practitioners who wish their book for surgical reference to be in the most condensed form.

SYPHILIS. By JONATHAN HUTCHINSON, F.R.S., LL.D., Consulting Surgeon to the London Hospital and to the Royal London Ophthalmic Hospital; Vice-President of the Royal College of Surgeons. With 8 chromo-lithographs. 16mo. pp. xii. 532. Philadelphia: Lea Brothers & Co.

A VALUABLE addition to the series of clinical manuals of its publishers, by an expert and accomplished writer, moderate in tone, judicious in spirit, and yet expressing the decided convictions of one whose experience entitles him to speak with authority, the student, no matter what may be his age, will find in this compact treatise a valuable presentation of a vastly important subject. It is in every respect abreast of the present state of our knowledge, and is well entitled to full confidence as the work of one who has made a lifelong study of the disease. The chromo-lithographs are very good illustrations of choroiditis and keratitis, of vaccination syphilis, of erratic chancres, and the changes produced in the tongue, teeth, and nails. Altogether we know of no better or more comprehensive treatise on syphilis, which at the same time is condensed into the small compass so much desired by the busy men of the present day.

SOCIETY PROCEEDINGS.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, October 26, 1887.

CHARLES MCBURNEY, M.D., IN THE CHAIR.

EXSECTION OF THE ELBOW FOR TUBERCULOUS DISEASE.

DR. GERSTER presented a patient with the following history:

Rudolph B., aged twelve, was admitted to the German Hospital, having tuberculous osteitis of the right olecranon, with two large abscesses and a fistulous opening leading into the joint. On March 30th, a partial exsection of the elbow was performed, and a sequestrum was removed from the olecranon, a shell of bone being preserved, to which was attached the triceps tendon. No drainage tubes were inserted, but the joint was closed and put up in the semi-flexed position. On April 12th, the dressings were removed, primary union having occurred. The elbow was then put up at a right angle, and passive motion was employed every three or four days, in spite of the fact that it caused some pain and swelling. During one of the exercises the cicatrix was ruptured, and bloody serum exuded; after that,

there was a persistent seropurulent discharge. Later, exuberant granulations appeared about the fistula, so that it was necessary to scrape it out two or three times.

On June 10th, complete excision was performed, as ankylosis seemed to be inevitable. The soft parts showed gelatinous infiltration, especially around the head of the radius, while there was a cheesy focus between the ulna and radius. About an inch of the humerus, radius, and ulna were removed, and the joint was put up in a semi-flexed position, the dressings being left undisturbed for five weeks, when they were removed and *active* movements were made. The boy began to use his joint almost from the first, and has continued to improve ever since; it has not been necessary to use the ordinary apparatus with lateral hinges. There is now considerable mobility, flexion and extension being normal; while pronation and supination are fair and will improve. The speaker stated that he had reported the case in order to call attention to the fact that a good result might be obtained by a secondary operation after partial excision had proved to be unsatisfactory.

DR. SANDS thought that the result was quite good, since the arm could be flexed and extended very well in one plane. He assumed that no one questioned the advisability of performing the partial operation only when it would be likely to effect the desired result. He had presented a patient to the Society a year before, in whose case he had removed a portion of the ulna and condyles, there being a cheesy focus limited to one condyle. There was better motion subsequently than after complete excision. He no longer performed the complete operation when the partial one was sufficient. He had sometimes removed the synovial membrane alone, leaving the healthy cartilage. This practice was the reverse of the old rule, which prescribed complete excision in every case. The advantages of partial excision were conspicuous when operating for tuberculous disease of the knee in young subjects, as in many cases the parts affected could be thoroughly removed without serious disturbance of the epiphyseal cartilage, the destruction of which would interfere with the growth of the limb.

DR. GERSTER said that he desired to lay particular stress upon the fact that passive motion had been entirely withhheld, and active movements had not been begun until the swelling had subsided. The old teaching was to commence "early" movements after the operation; but this meant in from six to eight weeks, because formerly there used to be abscesses around the joint, so that manipulation had to be delayed. He believed that he had often begun to make movements too soon, as a result of which he had caused rupture of the connective tissue and effusion, thus retarding the healing. It was better to wait until the swelling had entirely subsided, and then to try active movements only.

DR. WEIR thought that the tuberculous deposit is more commonly found in the ends of the bones, when partial exsection is more likely to be successful. Moreover, when the disease is confined to the synovial membrane and capsule, it may be sufficient to remove this alone, although the results of the operation, the arthrectomy of Volkmann, had not been very satisfactory in the hands of other surgeons. But, when the bone and the capsule were both affected, complete excision should be performed at once.

DR. STIMSON said that he had excised the capsule five or six times for disease which was apparently limited to it, and in three cases he had been obliged to perform complete excision subsequently. The subject had been discussed at a meeting of the Society a year before, and at that time other members had reported similar results. He thought that pronation and supination would always be imperfect in the case of the patient shown, for they were then effected by rotation of the ulna upon the humerus.

DR. GERSTER, in reply to a question by Dr. Abbe, said that the ends of the bones had originally been placed in apposition, but that they had become separated half an inch, as a result of lifting weights.

REMOVAL OF TUMOR (?) FROM THE BRAIN.

DR. MARKOE presented a patient and read the following report of the case:

Sidney McLowrie, aged twenty-five, England, gives the following history: In the year 1879, he fell from a height of about eight feet, striking on his head. He was stunned by the blow and remained unconscious for a certain time. Brain fever followed, from which he gradually recovered, until about two months from the time of the accident, when he had his first convulsion. Convulsions now recurred at irregular intervals for about two years, sometimes becoming as frequent as three or four in a night. These attacks gradually became less frequent, and at the end of two years ceased altogether. He had then regained good health and was able to attend to his daily duties as a clerk. There was no renewal of epileptic seizures until about a month before his admission to the hospital, January 15, 1887. At that time, while taking a bath, he accidentally struck his head, receiving rather a severe blow. No marked effects followed the blow, but within a week after a convulsion occurred, which was repeated at intervals more or less frequently, until they became as frequent as four during the night.

On admission he was anæmic and thin, but nervous and excitable, and quite intelligent. He had perfect possession of all his faculties, both mental and physical, and at no time had had any symptoms which could be referred to a cerebral lesion, except pain and the convulsions above mentioned. The head was irregular in shape, the frontal region prominent, the right parietal region bulging markedly, while the corresponding region on the left side was as markedly depressed. In the centre of this flattened area was a marked depression over a space as large as a half-dollar. Has had continual dull pain referred to the depressed spot. He had lately suffered a good deal of pain in the head, which had almost always been referred to, and had radiated from this same point, though at times the pains had been felt on the right side. He was ordered to keep his bed, to be put upon light diet, and to have bromide of sodium, thirty grains, three times a day.

On the third day after his admission, he had his first convulsion, which was followed by two more before morning. There was no aura, and no cry, nor did the muscular spasm begin at any single point. The spasm took the form of opisthotonos, alternating with extreme flexion, and followed by sleep.

January 21. No convulsions until last night, when he had five.

25th. Number of fits increasing. Bromide increased, and ordered six leeches over the region of pain. Violent, almost maniacal, excitement follows some of the convulsions. No diminution in the number of fits.

An operation was determined upon, and performed January 27th. The point of operation selected was the centre of the depressed portion of the left parietal bone, which corresponded quite accurately with the region of greatest pain, and which was on a level with, and about an inch and a quarter in front of, the left parietal bone. The operation was done after Victor Horsley's method, with a semicircular flap of the scalp, and a large trephine, one and a quarter inches in diameter. On removing the disk of bone, the dura mater did not bulge, but nevertheless presented a decided sense of fluctuation. Between the dura mater and the brain a firm, hard surface was felt, which the finger reached after pressing through perhaps two lines of fluid. The dura mater was now opened by a semicircular incision, one line within the edge of the saw-cut. When it was turned back, a surface was exposed of a bluish-white color, as if it were the surface of a thin, semi-transparent sac, containing fluid. The sac being opened, gave issue to some thin, pellucid fluid, in quantity at least a drachm, and revealed the contents to be two unequal bodies, of a rounded shape, lying close together, forming a mass about an inch in diameter as looked at from above. These masses did not present the appearance of the normal cortex, but were more grayish in color and of a distinctly granular appearance, and to the touch they were firmer than the normal surface of the brain. Without the use of any force, the handle of the scalpel passed easily around the mass, and turned out of the areolar bell in which it had lain. This removal showed the walls of the cyst to be continuous around the periphery of the tumor, and that the whole had been buried deep in the cerebral substance, pressing it down more than half an inch.

As I turned the mass out of its bed, I was not aware that I had divided any portion of cerebral matter, but, on studying the cyst wall after the mass had been removed, I saw a portion of exposed cerebral matter a: the anterior margin of the opening, and, though I examined it with care, I could not decide whether this was a point at which the tumor had been continuous with the convolution, or whether it was merely the surface of the convolution accidentally bared. This spot of exposed brain matter was about two lines in diameter. No hemorrhage took place during or after the enucleation. The dura mater was brought together with two or three catgut sutures, and the scalp-flap was accurately approximated in the same way. Light antiseptic dressings were applied, and two or three threads of large-sized catgut were left in the wound for drainage. Moderate reaction followed the operation. Some mental excitement, with amnesic aphasia was noticed during several days after the operation, with some paresis of the right arm. These symptoms, however, never reached a serious degree and subsided during the second week entirely. The wound healed *per primam*, and he was discharged well on the 19th of February, no convulsions having occurred since the operation twenty-three days previous.

The following is Dr. Prudden's account of his examination of the mass submitted to him.

"The small fragment of brain tissue which was sent to the laboratory was ellipsoidal in shape, measuring about 1½ by 1 cm. It consisted of white and gray brain matter normally arranged. The ganglion-cells lying, as usual, in layers, are nearly all considerably swollen and prominent. The intercellular substance is somewhat cracked and fissured, which might be due to the hardening in alcohol. The most marked departure in structure from the normal was an accumulation of small spheroidal cells in the lymph-spaces around the ganglion-cells. Sometimes as many as six or seven of these small cells lay crowded around the ganglion-cells. This accumulation of cells in the lymph-spaces has been described as occurring under a variety of conditions. The appearances are figured in Virchow's *Archive*, Bd. 69, in connection with an article by Herzog Carl von Bayern on the condition of the cortex in abdominal typhus. The microscopic appearances do not throw much light on the peculiar conditions which you found at the operation, and I am entirely at loss to account for them, except on the hypothesis of an aberrant fragment of brain tissue which had developed at the seat of operation."

October 26. From the time of his discharge from the hospital, up to the present moment, his health has been perfectly good, No abnormal sensation about the seat of the wound, and no pain in the head. The only exception to be made to this statement is an attack of pain rather severe, intermittent in character, and seated in the region of operation. He himself is disposed to consider the attack as the result of unusual devotion to work, he having undertaken to acquire the art of shorthand writing, and having given every evening to that study. The attack lasted only three days and then entirely subsided. This seizure came on rather suddenly, about the first week in October. His habits have been perfectly correct in all respects, and with the exception mentioned above, he has been able to attend regularly to his duties.

This case was of some interest as throwing light confirmatory of the views now entertained with regard to cerebral localization. The tumor, while undisturbed, gave no indication as to the locality. After removal, however, the slight inflammatory action set up in its areolar bed was sufficient to produce aphasia and paresis of the right arm. The position of the tumor corresponded very nearly to the centres for the arm and for speech.

NEPHRECTOMY BY LAPAROTOMY FOR ADENOMA OF THE KIDNEY; RECOVERY WITH VENTRAL HERNIA.

DR. WEIR presented a patient from whom he had removed a tumor of the kidney as large as the two fists, and weighing twenty-one ounces. This tumor was shown to the Society last January, and the history of the case was then related in detail. (THE MEDICAL NEWS, March 12, 1887.) The prognosis given by Dr. Peabody, after a microscopical examination, was not favorable, since he was inclined to look upon the growth as having a strongly malignant tendency. Nevertheless the patient was in good health, having gained forty pounds in weight, and was able to pursue his laborious occupation as a butcher, being only troubled by a her-

nial protrusion at the site of the incision; this was supported by a bandage. The incision was made at the outer edge of the rectus, according to Langenbuch's method, and in closing it the transversalis fascia had been sutured separately, as were the muscles also, in order to counteract the tendency to hernia which resulted from abdominal incisions. After the removal of the tumor, the cut edges of the peritoneum originally covering the kidney were brought together over the stump, and an opening was made posteriorly for drainage. Although there was considerable hemorrhage during the operation, the spouting vessels were readily secured with compression forceps through the anterior incision, which could have been done only with great difficulty through the lumbar incision.

DR. WYLIE, and other surgeons, suggested the advisability of performing a secondary operation for the cure of ventral hernia after laparotomy, the peritoneal cavity being opened and the peritoneum and transversalis fascia being sutured separately.

DR. WYETH said that he had been called to assist Dr. Wylie in an operation for the cure of ventral hernia following laparotomy, in which a good result was obtained. The peritoneum was united separately, and a series of deep sutures were carefully passed through the muscle and fascia. The speaker had adopted this method of closing the wound after laparotomy and believed that he had in this way prevented the subsequent formation of hernia.

OSTEOPLAQUES OF THE THIGH.

DR. ABBE presented a patient, sixty years of age, showing two large bony plates above the left knee, occupying the site of the lower halves of the vastus externus and vastus internus muscles. The internal

one measured six and one-half by four inches, and had an estimated thickness of an inch. They were freely moved. They represented the amalgamation of numerous bony nodules in the muscle, first observed as long as forty years ago. They had been watched by him for three years, and had changed but little. The flexing of the knee was partially restricted, and at long intervals the joint became painful and a little swollen when overtaxed.

DR. WEIR stated that he had seen the patient in 1884, and learned from him at that time that he had first noticed a number of small, hard nodules, which subsequently coalesced.

DR. STIMSON believed that the bony mass on the outer side had developed in the lateral ligament of the patella, and that its inner surface was in contact with the interior of the joint, as evidenced by crepitus on manipulation. On the opposite side the upper portion of the osteoplaques was evidently embedded in the muscle, while the lower portion appeared to occupy the capsule of the joint.

DR. WEIR said that he had seen a case in Schede's wards, in Hamburg, in which the nodules were confined to the muscles of the back and upper extremity. The pathology of the affection was obscure, only one autopsy having been made. *Myositis ossificans* (of which there were only about twelve or fifteen recorded cases) usually began in early life, and might follow inflammatory processes. It was sometimes thought to be of nervous origin, although the autopsy alluded to showed no nerve lesion. It was noted that in these cases the earthy phosphates in the urine were usually much diminished.

DR. BRIDDON said that he recalled the case of a patient who was presented at the Pathological Society several years before. He was a boy ten or twelve years of age. The osseous plates were confined to the trapezius muscles, and were unquestionably intramuscular.

EMPYEMA FOLLOWING STAB-WOUND OF THE PLEURA; RECOVERY AFTER EXSECTION OF PORTION OF A RIB.

DR. WYETH presented a patient, whose history was as follows: A man, aged thirty-five, was stabbed four or five times in the left side, three years ago; the lung was said to have been wounded. Considerable hemorrhage into the pleural cavity occurred, and a quantity of blood and serum was removed with a trocar and canula. The operation was repeated twice during the following two months, when the fluid was found to be purulent. Septic symptoms developed, and an incision was made to promote free drainage.

Dr. Wyeth saw him for the first time one year ago last May, and found that he was wearing a rubber drainage tube, which was closed by the pressure of the ribs between which it passed. Two inches of the seventh rib were exsected, and as much of the cavity as could be reached by the index-finger was thoroughly scraped out. The wall of the abscess could not be felt in a posterior direction, although the finger penetrated to its entire length. Two stiff rubber drainage tubes were introduced. The patient's convalescence was retarded by his dissipated habits, so that it was nine months before he could remove the tubes. The cavity was first washed out every third or fourth day (but later in the management of the case daily injections were made) with a solution of bichloride, beginning with a 1:3000, and gradually increasing in strength up to 1:500. Fifty or sixty injections of the latter were given without causing any symptoms of bichloride-poisoning. A weaker solution was always injected immediately after the strong one, in order to wash out any excess of the sublimate. The lung on the affected side was now collapsed, but on the other side the respiratory movement was good, and the patient was fully restored to health.

DR. SANDS thought that the case illustrated clearly

the value of a free opening in cases of purulent effusion into the chest. He had seen several cases in which, from the neglect to perform an operation early, the lung had been so bound down that it was impossible to effect a cure, even by removing portions of ribs. In one instance, at Roosevelt Hospital, he had exsected three inches from two ribs, but without curing the patient. If an opening was made early, Estlander's operation might be unnecessary. Dr. Wyeth's case also showed that it was not always necessary to remove much of the rib when the lung was remote from the chest-wall.

DR. WYETH, in reply to a question by Dr. Weir, said that he had not measured the contents at the time of the operation, but a few weeks after the cavity would hold about half a pint of fluid.

DR. WEIR said Estlander's operation had not given as good results as had been expected; it was often necessary to repeat it two or three times. Even after removing portions of ribs, the surgeon was often obliged to scrape out the cavity, to employ stimulating injections, or even to make a counter-opening. Sometimes the empyema-cavity could be further lessened at the performance of Estlander's operation by fracturing some of the ribs posteriorly.

DR. WYETH said that the most important point was to secure perfect drainage from the bottom of the cavity, and to wash it out frequently. He used tubes of stiff, white rubber. In reply to Dr. Sands's statement that he always used two tubes, side by side, the speaker said that he had omitted to mention that he had also employed two tubes in the same manner.

DR. POORE asked if a simple incision was not sufficient in most cases of empyema, without exsecting a piece of rib.

DR. WYETH replied in the affirmative.

DR. BRIDDON cited the case of a patient upon whom he had operated at the Presbyterian Hospital, removing portions of five ribs. Although the cavity was diminished in size, it still contained three ounces of pus when the patient left the hospital. A second operation was proposed and declined.

OSTEOMA OF THE UPPER JAW; REMOVAL OF THE SUPERIOR MAXILLA, WITHOUT MAKING AN INCISION THROUGH THE CHEEK.

DR. WYETH presented a patient from whom he had removed an osseous tumor of the left superior maxilla, involving almost all of this bone (the specimen was shown). He was a German, æt. twenty-eight, who at the age of fourteen had noticed a small swelling on the left upper jaw. It grew slowly, and was examined by a prominent German surgeon, who pronounced it to be a benignant growth. The speaker saw him for the first time six months before; the tumor was then increasing in size, and caused considerable deformity, so that an operation was advised. It was readily removed through the mouth, *without an incision being made through the soft parts of the face*, by the subperiosteal method. The growth involved the antrum, the whole of which was removed. Goodwillie's gag proved of great assistance during the operation. The periosteum was sutured with silk, and the patient left the hospital on the fourth day after the operation. The bone had been largely restored.

CORRESPONDENCE.

STROPHANTHIN VS. DIGITALIS.

To the Editor of THE MEDICAL NEWS,

SIR: Referring to your editorial note on the use of ergot in combination with digitalis, in a late issue of the journal, permit me to add a few words to your friendly criticism on the methods advised by Rosenbach.

Accepting as true, your statement, "that aortic insufficiency is, of all the valvular lesions of the heart, the very one which rather contraindicates the use of digitalis, in that it not only prolongs diastole, but likewise increases the ventricular capacity, thereby permitting a greater opportunity for regurgitation into the ventricle," I would go a step further, and point out the objectionable effects of digitalis in cases of this character, by reason of its pronounced influence upon the bloodvessels. I fully agree with you as to the undesirable action of ergot, its effect being to increase the expenditure of force on the part of the heart in overcoming the resistance in the arterioles; but how shall we meet a similar objection to digitalis?

The first centennial anniversary of the introduction of digitalis into medicine has lately been noted, and yet its therapeutical position is still indifferently understood. When we take into consideration that digitalis may be given to the extent of preventing the blood from passing through some of the bloodvessels, while the heart still continues to act, then do we begin to appreciate the conditions attending its so-called cumulative action, although I have lately been disposed to regard this so-called cumulative action as a misnomer, if not a myth. In cases of poisoning from the cumulative action of digitalis, we are taught that the heart is paralyzed and stops in diastole. Professor Bartholow says: "When, after the administration of large doses, the pulse is much reduced in the recumbent posture, on rising, the heart is suddenly found unequal to maintaining the circulation in the face of the increased resistance in the arterioles and against the force of gravity." It is evident, then, that digitalis is a remedy which diminishes the calibre of the arterioles, and acts on the cardiac muscle at the same time, but not in equal proportion on both, else there would be no loss of compensation.

Had we a remedy which would increase, say, two or three times the power of the heart, and act less energetically on the arterioles than digitalis, and thus equalize the compensation, it would be an acceptable addition to our *armamentarium*. A remedy which would act principally upon the heart, and slightly upon the bloodvessels, which, like digitalis, would produce diuresis and reduce temperature, would be suitable for exhibition in cases of "aortic insufficiency," and in cases of "idiopathic dilatation of the heart with alterations in the elasticity and contractility of the bloodvessels," instead of digitalis and ergot, as advised by Rosenbach. Such a remedy we have in strophanthus hispidus, first introduced by Pelikan in 1865, and studied thoroughly by Professor Fraser, of Edinburgh, who, twenty years later, placed the drug, with its physiological action and therapeutical indications, before the British Medical Association. As compared with digitalis, its

action on the heart is more than twenty-five hundred times greater; while on the bloodvessels its action is less than one-tenth that of digitalis.

Let me quote, in conclusion, and in support of the above statement, from Professor Fraser's paper (*Brit. Med. Journ.*, Nov. 14, 1885): "Solutions of digitalis, 1 part in 4000, passed through the separated frog's heart by means of Williams's apparatus, produced characteristic changes in the heart's action, but were not sufficiently strong to kill it within two hours; while a solution of strophantin,[1] 1 part in 10,0000,000, produced characteristic changes in the heart's action, and killed the heart. A solution of 1 part in 6,000,000 was sufficiently strong to cause complete stoppage of the heart in extreme systole in about twenty minutes. Taking the same preparation as had been used upon the heart, and passing solutions through the bloodvessels, it was found that digitalin, 1 part in 20,000, produced, in six or seven minutes, such extreme contractions of the vessels as practically to prevent the solutions from passing any longer; while but a temporary effect, which was soon recovered from, was produced when the solution of strophantin was increased to 1 part in 2000." It would seem, therefore, that in the diseases mentioned above, strophantin, as respects the heart, is twenty-five hundred times more efficient, while in respect to the bloodvessels, its use is followed by less than one-tenth the activity of digitalis, thus presenting a material contrast between the two remedies. Whether the position of strophanthus will be settled finally as being *twenty-five thousand* times more valuable than digitalis, I leave for physiologists of a mathematical turn to determine.

Very respectfully yours,

JOHN AULDE, M.D.

4719 FRANKFORD AVE, PHILADA.,
October 29, 1887.

AID FOR THE MEDICAL COLLEGE AT SHANGHAI.

To the Editor of THE MEDICAL NEWS,

SIR: Allow me to ask your aid on behalf of the medical department of St. John's College, Shanghai, China. We have in Shanghai, hospitals for natives with about 230 beds; we have out-patient departments, treating some 23,000 or 24,000 individual out-patients every year. Our facilities for clinical teaching are good. These institutions are supported by their own earnings and by local charity. We do not need any money for them. We own the land and a building for the medical school; we have the nucleus for a medical library and a medical museum, and we hope that this museum will—by contributions from all parts of China—become a most important and valuable institution. Shanghai is the business centre of China, most easy of access from all parts of the empire. Our medical school has four lecturers and one tutor, and we have a small class of medical students. Candidates for medical instruction undergo a preliminary examination; after admission they study three months, when they have to pass another examination. Should they not show aptitude for the study of medicine they are required to leave the class. If proficient they sign an agreement to remain and study for four years. The first two and a half years they are in the medical school, the last year and a half they act as internes at St. Luke's Hospital. They then pass their eighth final examination, and are free to go out and practise medicine. While our hospital is independent, needs no help, we need about $800 a year, for a few years to come, to enable us to keep the medical school going. When our graduates begin to earn a living as doctors, we shall have so many applicants for medical instruction that we shall become self-supporting. Can you lay these facts before the medical profession of this country and ask them to help us? The smallest contributions will be thankfully received. We hope that medical authors will donate copies of their works to our library, that the medical book publishers will give us books for our library, and that the medical profession of the United States will help us to give the benefits of modern medical science to the people of this great nation, and thus help, on a grand scale, to alleviate the vast amount of human suffering among the three hundred millions of people in China. Any contributions in money or donations of books, can be sent to Rev. Dr. Wm. S. Laryford, Secretary of Board of Missions, 22 Bible House, N. Y., and they will be forwarded to China. I remain,

Yours, faithfully,

H. W. BOONE, M.D.,
Vice-President Medical Missionary Association of China;
Lecturer on Surgery,
Med. Dept. St. John's College, Shanghai, etc.

PHILADELPHIA, October 26, 1887.

[1] Prof. Bartholow regards *tin* as the proper termination.

NEWS ITEMS.

THE DISCUSSION ON CHOLERA AND INTERNATIONAL LEGISLATION AT VIENNA.—In the discussion on cholera in the Third Section, PROF. MAX GRUBER, of Vienna, speaking of certain experiments which he had made, in Austria, in 1885 and 1886, as to the spread and prophylaxis of cholera, concluded his remarks by saying that Koch's vibrio was the specific agent in Indian cholera, and that it was propagated by patients suffering from the disease or by infected clothing, linen, etc. In his (the speaker's) opinion, it had not been proved that cholera could be transmitted by drinking-water. It was quite evident that the spread of cholera depended on seasons and weather. The etiology of cholera had still to be determined. The prophylactic measures which had been adopted in Austria to prevent the spread of the disease by patients suffering from it were, nevertheless, fully justified, and if they had not been as successful as might have been wished, that was due to the difficulty, or rather impossibility, of carrying them out with adequate strictness. It was necessary that sanitary organization should be improved, and particularly that proper instruction in hygiene should be given in the public schools. Dr. Shiba-Saburo Kitatair, member of the Ministry of the Interior of Japan, reported on the cholera epidemics which had visited Japan, first in 1822, and afterwards in 1877, 1879, 1882, 1885, and 1886, and stated that the disease had always been imported into Japan from China by English or French ships. In its method of dealing with epidemics Japan was, according to the speaker, fully abreast of the most enlightened countries.

The suggestions made by Mr. Shirley Murphy, which were almost identical with those made by the other reporters, were as follows: 1. The appointment of a sanitary authority at every port, whose duty it should be to keep himself informed as to the sanitary condition of the port, and the health of the passengers and crews of vessels arriving at or leaving the port. This information should be placed at the disposal of the Consuls of the countries to which the vessels are bound. 2. Every country to have a central office, to which reports should be sent of the number of cases of specified epidemic disease occurring in every large town and port during each week, immediate notice being sent of cases of cholera. This information should also be placed at the disposal of the governments of other countries. 3. Precautions must be taken by the sanitary authorities and officers of vessels as already indicated, to prevent the embarkation of persons or articles infected with cholera. 4. A station should be established on the Suez Canal for the purpose of obtaining information as to the health of passengers and crews of vessels bound for Europe, but not for their detention for more than the time necessary for procuring this information. 5. This information should be placed at the disposal of representatives of the different governments. 6. Every vessel arriving at a European port should be dealt with in accordance with the manner determined on by the government of that country.—*British Medical Journal*, October 22, 1887.

GLEDITSCHINE.—F. A. Thompson, Ph.C., reports as follows to Messrs. Parke, Davis & Co., at whose request he analyzed a sample of the substance called "gleditschine:"

My conclusions, subject to further analysis, which I hope may identify the exact constituents, are:

1. That the solution claimed to be a two per cent. of gleditschine, is not what it is represented, and that those introducing it as such are guilty of fraud.

2. That the solution likely contains some coloring agent, differing from that obtained from the drug in which the alkaloid is isolated, or that the color may be due to the presence of an alkaloid, or the substance supposed to be in combination with the cocaine.

3. That the peculiar action of the extracted alkaloid to chemical tests, appearance, taste, and odor, suggest it to be none other than cocaine.

4. That the presence of chloride and sulphate indicates positively that a sulphate of one alkaloid and a muriate of another are present; and the presence of cocaine being established, which is without doubt in the form of muriate, the sulphate can be accounted for only by assuming that it is in combination with *atropine*, or some other mydriatic alkaloid, such as *duboisine*.

5. The solution contains 6.85 per cent. of alkaloid, calculated as cocaine muriate, instead of 2 per cent. of gleditschine (!) as stated on label.

6. That the dilatation of the pupil of the eye was thought to be more lasting than from cocaine, and less so than from atropine, indicating the possible presence of some myotic, modifying the action of the mydriatic. Experiencing no dryness of the throat or any hallucinations from the hypodermatic injection of the solution, it is possible no *mydriatic* except cocaine is present.

7. That the statement made, that the salt was not permanent, and finding the salt of the alkaloid in this solution quite so, leads one to suppose that this *is not the reason for making such an assertion.*

8. That having had placed at my disposal through the firm of Parke, Davis & Co., several pounds of the leaves, from which I am unable to produce, as yet, but a trace of alkaloid giving precipitates with the usual alkaloidal reagents, and which, applied to the tongue, produces no sensation whatever, and the existence of a volatile constituent very probably, and a large amount of resinous-like substance having strong astringent properties being present, I question the existence of an anæsthetic or mydriatic alkaloid in Gleditschia triacanthus.—*Medical Age*, October 25, 1887.

GLEDITSCHINE AGAIN.—Mr. Nooy, of the Hygienic Laboratory of the Michigan University, also states in the *Pharmaceutische Rundschau* for November, 1887, that the so-called gleditschine or stenocarpine is nothing but a mixture of cocaine and atropine, and that the 2 per cent. solution which is on the market is nothing but a 6 per cent. solution of cocaine hydrochloride and ½ of 1 per cent. of atropine sulphate, to which has been added ⅓ of a per cent. of salicylic acid to act as a preservative.

THE WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY has elected the following officers for the ensuing year:

President—Samuel C. Busey, M.D.
Vice-Presidents—D. W. Prentiss, M.D., and W. W. Johnston, M.D.
Treasurer—George Byrd Harrison, M.D.
Recording Secretary—Samuel S. Adams, M.D.
Corresponding Secretary—G. Wythe Cook, M.D.

THE HEALTH OF THE CROWN PRINCE.—The *British Medical Journal* of October 22d, states "plainly and without any diplomatic reserve or ambiguity," that, according to the best authority on the subject, the Crown Prince's condition is, up to this morning, highly satisfactory. There is no recurrence whatever of the growth; the functions of the parts are not interfered with in the slightest degree, except that the voice is still rather weak; there is no appearance or sensation in the throat that need cause either alarm in the present or well-grounded apprehension as to the future.

SIR WILLIAM GULL is reported to be progressing favorably. Power of action in the affected extremities has been regained, and sensation is returning.

THE buffalo has been recently utilized for the propagation of vaccine virus, with excellent results. The experiment was performed in India.

STRICKER'S ELECTRIC MICROSCOPE.—The *British Medical Journal* of October 8, 1887, thus describes a recent invention of this distinguished histologist, as exhibited at the recent Congress of Hygiene at Vienna:

A very interesting feature of the programme on Wednesday, September 28th, was the demonstration of Stricker's electric microscope by the Professor himself. The lecture-room of the famous histologist was crowded to overflowing, and a large number of visitors

could not find places. Among those present were the following: Virchow, Cornil, Chauveau, Spencer Wells, Szabo, Thann, Mustafa Effendi, and many others. Professor Stricker began by showing a transverse section of the spinal cord; he alternately used projecting lenses of an increasing power, and was able to demonstrate the constituents of the spinal cord, the ganglion cells, and the nerve fibres so distinctly, that even the faintest outlines of the microscopic details could be distinctly seen by all present. The wall on which the microscopic objects were projected was at a distance of six metres from the electric microscope. Among the preparations there was also a transverse section of the spinal cord, taken from an individual who had been executed some time ago. Professor Stricker succeeded in demonstrating, particularly by means of this specimen, the details of the structure of the spinal cord in a very distinct manner. After Professor Stricker had also demonstrated a number of other specimens, he showed the utility of the reflected light in his microscope. He succeeded in projecting, with a 25-fold linear augmentation, specimens of bones so distinctly, that the minutest constituents could be quite distinctly seen from the furthest part of the room. Lastly, he showed the movements of the heart of a turtle as projected by his electric microscope. The evening which the members of the Congress passed in Professor Stricker's lecture-room was one of the most interesting during the whole session of the Congress, and the demonstrations were all received with the most enthusiastic applause.

THE BEST SOLDER FOR CANS CONTAINING FOOD.—Mr. T. P. White, in a communication to the Chemical Society, gives a decidedly negative answer to the question whether the acids of canned fruits may not form poisonous salts with the tin. He reports, as the result of his experiments, that "tin is entirely devoid of danger when taken internally in any form that might arise from being in contact with fruits or vegetables." He believes that the cases of accidental poisoning attributed to tin were due to solder or other impurities—arsenic, copper, or lead. Prof. W. Mattieu Williams says that that there need be no lead in the solder—that it is only put in for cheapness' sake, and that tin makes a superior solder to any alloy. Therefore, all danger may be obviated by prohibiting the use of any other solder than pure tin.—*Popular Science Monthly*, October, 1887.

COBALT AN ADULTERANT FOR MILK.—Cobalt blue has been used to give a bluish tinge to yellow milk, and is dangerous on account of the arsenic which it contains as an impurity.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U.S. ARMY, FROM OCTOBER 25 TO OCTOBER 31, 1887.

GREENLEAF, CHARLES R., *Major and Surgeon.*—Will proceed from this city to the places hereinafter named, in the order in which they are named, for the purpose of investigating the methods of examining the recruits at the depots and rendezvous located thereat, and of instructing recruiting officers in matters pertaining to such examinations: Baltimore, Md; Philadelphia, Pa; Camden, N. J.; New York City and David's Island, N. Y.; Boston, Mass.; Portland, Me; Albany and Buffalo, N Y.: Cleveland, Ohio; Detroit, Mich.; Chicago, Ill.; Milwaukee, Wis.; St. Paul, Minn; Jefferson Barracks and St. Louis, Mo.; Cincinnati and Columbus, Ohio; and Pittsburg, Pa.—*S. O. 248, A. G. O.*, October 25, 1887.

CLEARY, P. J. A., *Major and Surgeon.*—Ordered to proceed from Fort Huacchuca to Fort McDowell, and report to the commanding officer for duty as Post Surgeon.—*S. O. 111, Department of Arizona*, October 18, 1887.

ADAIR, G. W., *Captain and Assistant Surgeon.*—The leave of absence for seven days, granted on the 27th instant, by the commanding officer, Fort Brady, Michigan, is extended twenty-three days.—*S. O. 231, Division of the Atlantic*, October 28, 1887

MUNN, CURTIS E., *Captain and Assistant Surgeon.*—Relieved from duty at Fort Canby, Washington Territory, and ordered for duty as Post Surgeon, at Fort Klamath, Oregon.—*S. O. 251, A. G. O.*, October 28, 1887.

BYRNE, CHARLES B., *Captain and Assistant Surgeon.*—Ordered for temporary duty at Fort McHenry, Maryland.—*S. O. 231, Division of the Atlantic*, October 28, 1887.

BROWN, PAUL R., *Captain and Assistant Surgeon.*—Leave of absence extended one month.—*S. O. 250, A. G. O.*, October 27, 1887.

BURTON, H. G, *Captain and Assistant Surgeon.*—Ordered from Plattsburg Barracks, New York, to Watervliet Arsenal, New York.—*S. O. 249, A. G. O.*, October 26, 1887.

MERRILL, J. C., *Captain and Assistant Surgeon.*—Ordered from Watervleit Arsenal, to Frankford Arsenal, Pennsylvania.—*S. O. 249, A. G. O.*, October 26, 1887.

RICHARD, CHARLES, *Captain and Assistant Surgeon.*—Granted leave of absence for one month, to take effect when his services can be spared by his Post Commander.—*S. O. 247, A. G. O.*, October 22, 1887.

JARVIS, NATHAN S., *First Lieutenant and Assistant Surgeon.*—Ordered from the Department of the Platte to the Department of the Missouri, for duty in the field.—*S. O. 249, A. G. O.*, October 26, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 29, 1887.

BATES, N. L., *Medical Inspector.*—Ordered to hold himself in readiness for orders to the "Trenton."

HESLER, F. A., *Assistant Surgeon.*—Ordered to examination for promotion.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING OCTOBER 29, 1887.

BAILHACHE, P. H., *Surgeon.*—To proceed to Buffalo, N. Y.; Erie, Pa; Ashtabula, Cleveland, Sandusky, and Toledo, Ohio, as inspector, October 4, 1887.

FESSENDEN, C. S. D, *Surgeon.*—Detailed as Chairman of the Board for the Physical Examination of Cadets, Revenue Marine Service. October 15, 1887. To proceed to Cape Charles Quarantine Station, as inspector, October 26, 1887.

SAWTELLE, H. W., *Surgeon.*—Detailed as Chairman of the Board for the Physical Examination of Officers, Revenue Marine Service, October 27, 1887.

IRWIN, FAIRFAX, *Passed Assistant Surgeon.*—To inspect unserviceable property at Boston, Mass, and Portland, Me. To proceed to Vineyard Haven, and New Bedford, Mass., as inspector, October 8, 1887.

MEAD, F. W., *Passed Assistant Surgeon.*—Detailed as the Recorder of the Board for the Physical Examination of Cadets, Revenue Marine Service, October 15, 1887.

WHITE, J H., *Passed Assistant Surgeon.*—Leave of absence extended four days, October 21, 1887.

CARRINGTON, P. M., *Assistant Surgeon.*—Detailed as the Recorder of the Board for the Physical Examination of Officers, Revenue Marine Service, October 27, 1887.

FATTIC, J. B, *Assistant Surgeon.*—Granted leave of absence for seven days, October 28, 1887.

PETTUS, W. J., *Assistant Surgeon.*—When relieved at Savannah, Ga., to proceed to Galveston, Texas, and assume charge of the service. October 17, 1887. Granted leave of absence for thirty days, October 21, 1887.

KINYOUN, J. J., *Assistant Surgeon.*—Granted leave of absence for fifteen days, October 19, 1887.